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ABSTRACT

The materials in this report provide a case study of the development and validation of self-instructional lessons on four topics customarily included in a first college accounting course. For each topic, performance objectives were embodied in four criterion tests. The author provides documents relating to departmental curriculum decisions and to a personnel grievance that hampered the project. The project evaluation was accomplished by teaching elementary accounting both conventionally and by the system employing self-instructional materials during one semester and then comparing the performance scores of treatment groups on a number of subtests by analysis of variance. According to the report, those students who used the self-instructional materials did significantly better on subtests than did the conventionally taught students. The complete self-instructional materials and tests are contained in the document. (Author/JF)

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FINAL REPORT

Project No. 0-A-014
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SELF-INSTRUCTIONAL MATERIALS FOR TOPICS IN ELEMENTARY ACCOUNTING -- A MEANS TO THE DEMONSTRATION OF PAY-OFFS FROM INDIVIDUALIZING TIME-TO-COMPLETE

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U.S. Department of
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SELF-INSTRUCTIONAL MATERIALS FOR TOPICS IN ELEMENTARY ACCOUNTING- A MEANS TO THE DEMONSTRATION OF PAY-OFFS FROM INDIVIDUALIZING TIME-TO-COMPLETE

Summary

The primary goal of this project was an enabling one. It would be achieved by a follow-on demonstration in which students in a class would be doing different things at most stages in the progress of a semester - the only rational response to the facts of individual differences. The objectives of the project itself were to develop and validate self-instructional lessons on four topics customarily included in the first college course in accounting. The lessons were selected for their relative independence of sequence (assuming certain common prerequisite capabilities had been acquired). The titles of the lessons are:

Accounting for Bad Debts
The Cost of Borrowed Money
Imprest Funds - A Petty Cash Example, and
Reconciling the Bank Statement

For each lesson the performance objectives were embodied in four criterion tests and it was the developmental goal that for each 90% of the students would be able to demonstrate mastery (roughly indicated by a 90% score, but including some absolute requirements) in no more than three trials. An aspiration was to include sufficient diagnostic and remedial materials to allow the foregoing objective to be met by students who had prepared by any means, but it was realized that some number of students would be too lacking in prior preparation.

There were some incidental objectives. One was the formal validation of a number of existing self-instructional lessons which the principal investigator had already developed. A second objective was to use treatment-interaction analysis to look for clues to individualizing instruction according to student aptitudes. The three measures of aptitude chosen for investigation were verbal score on the College Entrance Examination Board test, grade in Freshman English composition, and grade in Freshman Mathematics. A planned use of two-way analysis of variance to test the interaction between instructional treatment in prerequisite topics and instructional treatment for the topics of the project lessons, had to be abandoned because of various institutional interferences with the research design.

In fact, the project was hampered at every step by individual and collective decisions or neglect, nearly from the various outset. As soon as it became apparent that factors beyond the principal investigator's control would constitute important determinants of the project outcomes a systematic collection of evidence

relevant to these factors was also undertaken. As a consequence, the developmental project has been augmented with a case study and analysis. Its purpose is to document and explain why the impact of attempts to alter college instructional practices is often negligible.

The planned development of the lessons was handicapped by lack of expected cooperation and by the frequent turnover of personnel filling supposedly-cooperative roles. Subject to these influences, the customary pattern of developing programmed materials was followed. It is an empirical activity characterized by:

(1) development of behavioral objectives
(2) task analysis
(3) preparation and validation of criterion frames for component tasks
(4) preparation of teaching frames
(5) individual try-out of the frames and revision
(6) group try-outs followed by any necessary revision.

So far as the case study goes, various documents were collected relating to departmental curriculum decisions and a personnel grievance which promised to establish some characteristics of *de facto* learning objectives in elementary accounting was pursued. An incidental result of the latter was to identify a most inadequate judicial procedure - one which omits many academic counterparts to constitutional guarantees.

The means of evaluation were to teach elementary accounting, conventionally and by means of a system employing the self-instructional materials, during a semester and to compare the performance scores of treatment groups on a number of sub-tests by analysis of variance. The sub-tests were randomly selected from sets of criterion tests which the conventional teacher was given as behavioral objectives, and which the system used to define mastery. During the portion of the course when the project lessons were used by the system students, unfortunately the last two weeks of the semester, one section of conventionally prepared students also used the project lessons. The other conventionally prepared group was taught from the textbook they had been using; but, like all of those using the project lessons, they were expected to achieve mastery on some criterion test for the lesson. Sub-tests on the project lessons were included in the final examination common to all groups.

The aptitude measures were collected and analyzed by one-way analysis of variance. Unfortunately, the system-taught group was significantly superior to the conventional groups on two of the aptitude measures. The sub-scores were analyzed by analysis of variance. In addition, the scores on the first criterion test attempted on each lesson topic were also compared. For this purpose, system students were required to take the first test on a common schedule with the other students, an abnormal procedure for them. Despite a small number of system students the first-attempt scores showed a statistically significant advantage in performance over the combined groups who were conventionally prepared. On the sub-tests related to the pre-project lessons the system-taught students were very superior, in five of the seven cases at the .01 level or beyond. However, in one of the remaining cases the difference was slightly short of the .05 level. Four of these sub-tests comprised the mid-term examination. The median total score for the system treatment was at the 90th percentile of the conventional group scores. On the sub-tests for the project lessons there was a statistically significant advantage for system-taught students in two cases and an advantage approaching closely to significance in one. On the fourth lesson, all groups did too well for a significant difference to exist.

Of course, the greater aptitude of the system-taught students might deprive the above results of significance. Fortunately, the treatment-interaction analysis can resolve the question. There were no clues to individualizing instruction by treatment because the instructional system was very consistently advantageous. In most graphs the line for the system students dominates that for the conventionally prepared groups over all relevant ranges of aptitude. Where there is a crossing, most of the range of aptitudes enjoyed more benefit from the system. In effect, the treatment-interaction analysis reveals many replications in which there was better learning by system-taught students over all, or nearly all, of the ranges of aptitudes. The advantage of the pre-project lessons was clearly demonstrated and most of the project lessons were shown to be effective when prior instruction had provided appropriate entering behaviors.

Attempted comparison of the use of project lessons to conventional instruction of these topics was almost entirely vitiated by administrative intervention. After some period of involvement, students were told that their success on the criterion tests "would not affect their grades unduly." As an undoubted consequence, there was a marked decline in the frequency with which students prepared for and took make-ups on the criterion tests. Only a small fraction of either class ever achieved mastery - even on the first lesson where persistence was much better. However, those who used this project lesson (Accounting for Bad Debts) did perform significantly better on the post-test, in spite of the fact that on their first attempt the average of their scores had been insignificantly poorer than the all-conventional group.

The case study includes cross-department evidence that the proportion of students with which conventional instruction succeeds (fewer than 10%) may include no one who would not have succeeded without the instruction. It also reports widespread faculty indifference to this finding.

SELF-INSTRUCTIONAL MATERIALS FOR TOPICS IN ELEMENTARY ACCOUNTING - A MEANS TO THE DEMONSTRATION OF PAY-OFFS FROM INDIVIDUALIZING TIME-TO-COMPLETE

Introduction

The activity supported by this grant is the development and evaluation of four modular lessons customarily included in the first course in college accounting. Improved instruction for these topics was a secondary goal, however.

The application said:

> Emphatically, the chief purpose of this proposal is to enable a demonstration of more individualized instruction within the traditional college system of instruction. ... there must be a break with the semester (or any fixed-time) constraint before different students can take advantage of adequately varied means to valid learning. The University will not be freed from the calendar all at once. Worse, unless there is a beginning - a demonstration of feasibility which necessarily must survive in a system whose assumptions are hostile - NO CHANGE WILL OCCUR.
>
> Few teachers will consider that there is time for an alternative to instruction which has failed (especially if a minority have been unsuccessful) when they "know" that "grades must be in on time," "all topics must be covered," etc. This is understood and accepted by enough of the University of Massachusetts administration to make a beginning possible (provided the vehicle of self-instruction is available). Since habits of thought do not change rapidly, it seems urgent to implement the necessary departure as soon as possible. Changing these habits is the project's real goal.

Achievement of the goal seems farther off than when the project was proposed. Because of this distressing fact, the normal report of the development effort and its results has been augmented by a case history of the principal investigator's experience.

The assessment of the University of Massachusetts climate in the above quotation was unduly optomistic. The University system has operated to hobble the developmental efforts and to confuse the assessment of their outcome. More importantly, it has become completely unhospitable to the follow-on project envisioned. It is believed that the description of the operation of the total University system as it affects instruction, and as it operated to maintain the status quo, contains many elements and explanations which are pertinent to the general problem of upgrading University instruction. In particular it points to the impact of factors outside the classroom.

The principal project activity has been the development of the four lessons which are included here as Appendix D. The titles of the lessons are:

Accounting for Bad Debts
The Cost of Borrowed Money
Imprest Funds - A Petty Cash Example, and
Reconciling the Bank Statement

The topics were not chosen for their importance, but for their potential flexibility. A goal, always considered uncertain of attainment, was to include with each lesson sufficient diagnosis and remedy to permit the attainment of the lesson objectives regardless of the means of prior preparation. The project has had limited and uncertain success in achieving this end. An incidental goal of the project has been achieved, the formal validation of existing programmed lessons, which include the entering behaviors for the new, modular ones, was achieved. Consequently, there exists a reliable means of implementing the primary goal of individualization. The new materials, together with those developed prior to the project, enable a modest, but valuable, response to the strikingly varied capabilities within a typical class. By giving them the new topics as they finish the introductory program, faster students can be saved any delay while slower students catch up and the same materials can be used, when needed, to extend the semester by about two weeks. This is a modest accomplishment when compared to the amount of individualization demanded by individual differences. However, instead of furnishing a pilot for more adequate individualization, the hostile assumptions of the existing system have managed to label individualization a bad thing in itself. How the latter came about is primarily related in Appendix A, although its implications are analyzed in the report proper.

Methods

Instructional Development. The general outline for developing programmed lessons is: (1) Analyze the content to be taught and formulate criterion tests of "satisfactory" learning of the topics. (This includes the specification of a minimum acceptable performance on the test.) (2) Prepare teaching frames designed to enable the learner to reach criterion. (3) Try out the teaching frames with representative learners. (4) Revise by repeating steps two and three until criterion is met. (5) Try out with one or more groups and revise if necessary.

During the summer of 1970 four criterion tests (progress checks) were prepared for each of the four lessons. In the case of "Accounting for Bad Debts" these were entirely new tests. Tests on the other topics were either already in existence or were edited combinations of tests which had been in use for several semesters. The tests on Bad Debts were designed to help maintain certain behavior which would be necessary for several of the post-tests. Prior experience had indicated that certain details of topics presented early in the course, which were frequently incidental parts of problems on the topics under development, were not well retained by the time of the final examination. Infrequent occurrence is also a significant characteristic of the events and reporting which make up the Bad Debts topic. Therefore, while the types of occasions about which a student needs to learn are not numerous, and while the individual responses are not long or detailed, there is a need to provide context for the responses which may cover a considerable span of time. One of the instructional problems is to enable the student to distinguish accurately between "adjustments", "write-offs", and "recoveries", as well as to produce appropriate responses to each. A difficult problem, which was not well handled, is to cover this time-span in a sufficiently abbreviated way while stating clearly the requirements peculiar to the subject matter. The material included for behavior maintenance proved much more time-consuming than was forecast.

As originally planned, some of the new tests would have been tried out in a second summer school session. For the first time in several years, there was only one summer term. Such individual tryouts of examinations as were possible used students whose study was not current. This affected motivation and made performance difficult to interpret. Most tests employ special formats. The plan had called for the use of existing programmed materials and the participation of a teaching assistant who would be subject to direction in the timing of coverage of Bad Debts and in the use of various progress checks in his class. Use of some forms is readily learned as part of the program. The new ones provide ways to respond with the same concepts. By varying the format, we discourage the learning of location rather than of a concept.

At the end of the summer a series of frames (pp. 30-44 of the finished lesson, Appendix D) which were thought to represent the principal practice required in the Bad Debts lesson had also been prepared. The plan for the fall semester 1970 was to complete the original versions of all lessons and to use at least three of them in two sections taught by a cooperating instructor.

The principal investigator (PI) did not teach the introductory course during this semester. At the end of the term, original versions of three lessons were ready for try-out. None had been usefully tested.

Some of the uncontrollable factors contributing to this substandard achievement were:

> The substitution of a new faculty member for the expected teaching assistant, which altered the PI's role from supervisory to advisory;
>
> the use by this new faculty member of a text with radically different organization to give a significantly different course;
>
> a decision to rush the preparation of the lesson on Accounting for Bad Debts which sacrificed individual try-outs and any possibility of revision;
>
> the severe mis-estimate of the time try-out students would require for the completion of this lesson, with the result that fewer than half of them had completed the assignment when they were given a criterion test;
>
> the abandonment of this topic by the instructor.

The PI concurs with the abandonment of the lesson. The lesson assumed a mastery of a difficult topic, "adjustments". The major event to be accounted for in the Bad Debts topic is an adjustment. However, in fact, "adjustment" was an unfamiliar term so far as any instruction in the try-out class was concerned! The new teacher was not receptive to the suggestion that he give remedial instruction and retest with alternative versions of the progress tests.

At this point it was agreed that there would be time to prepare only the two shortest lessons for group try-out. Try-outs of these lessons and associated, combined progress checks were scheduled for the last week of the term. When the lessons were available, however, the teacher expressed great reluctance to take time from his own plan to fulfill the agreement. There was no way to insist. Ultimately these lessons required only very modest revision.

There was another modification in the plan at this time. The PI was advised of the substitution of a new cooperating teacher, a graduate assistant with teaching experience at a community college. Since the schedule called for a cooperating instructor to use a particular textbook and to familiarize himself with the progress checks which represented the instructional objectives and with the programmed lessons, it was necessary to start him on a period of intensive familiarization. It then developed that he had based his agreement on information about only the design for evaluation, which was scheduled for the following fall, 1971. At the end of the semester this individual had not cooperated in any way. Although he had been awarded a part-time instructorship and although no substitute participant could be identified, he was granted permission to withdraw form participation.

The significant project activities of the spring semester, 1971, were completion of a try-out version of the lesson on Cost of Borrowed Money and the use of all lessons in the classes of the PI. Existing programmed materials were also used. Obviously, no significant information was obtained about the entering behavior of a "conventional" group or about the satisfactoriness of the lessons or progress checks for them. A few individual try-outs of the lessons were satisfactory for the stage of development. The chief problem for this semester, (spring, 1971) and those of the remainder of the project, was the lack of a large and representative group with which to attempt a validation of the developmental effort. Appendix A describes the problem in detail. Concerning the population available to the PI, it may be reported that all students were able to pass a progress check for each lesson, although often with repeated trials. The times reported for the Bad Debts lesson averaged half those reported in the abortive fall 1970 tryout. At the same time, analysis revealed that there had been more incorrect responses to frames of this lesson than any of the others.

Project activities of the summer of 1971 included a moderately extensive revision of the Bad Debts lesson, slight revisions of the Petty Cash and Bank Reconciliation lessons - which were given final packaging - and an analysis of the responses to the Cost of Borrowed Money lesson.

The PI's activities of fall 1971 consisted of the conduct of two small sections of the introductory course, the tryout and final packaging of the Cost of Borrowed Money lesson and another tryout of the Bad Debts lesson. Once again, all students who took the final examination were able to use the newly-developed lessons to demonstrate "mastery" in one to five trials. However, because criterion had been set at a maximum of three trials, some additional revisions were made before the lesson was packaged for evaluation.

In concluding this discussion of development methods the reader is cautioned to consult Appendix A for information about the sections taught by the PI. They are undoubtedly not typical and very tiny numbers are involved. At no time were students of "conventional" sections available for try-out. Needless to say, this was unanticipated and unwelcome.

Evaluation

Evaluation of the existing programmed materials was carried out in the spring of 1972. An attempt was made to evaluate the lessons developed in the project, but circumstances more nearly resembled the semester planned to precede evaluation. Indeed, nearly every departure from the plan for the project resulted in an object lesson showing the importance of having included that element in the first place.

The Plan. The following table, Exhibit 1, summarizes the research design proposed. Four treatments were expected to be applied to four sections of approximately 25 to 30 students, assignment being made by computer.

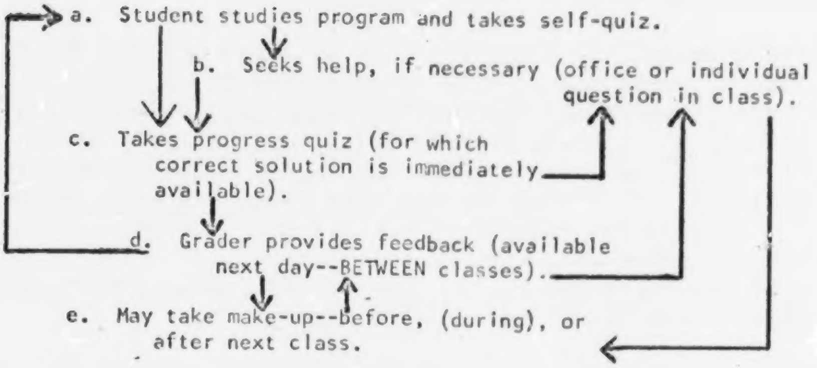
EXHIBIT 1
ORIGINAL RESEARCH DESIGN

	System pair		Conventional pair	
	PP	PT	TP	TT
Accounting cycle and merchandising (approx. 6 weeks)	System using instructional program	System using instructional program	Text, and "conventional" plan	Text, and "conventional" plan
Any subsequent period, but timing same for all treatments	New Programmed materials	Text, and "conventional" plan	New programmed materials	Text, and "conventional" plan

The teacher of the conventional pair was expected to use a standard textbook and whatever instructional technique or supplementary materials he thought necessary to achieve instructional objectives embodied in a number of progress checks which were employed in operating the instructional system which would also be used by the PI for the sections referred to as the "system pair." There are at least four versions of nine different quizzes. Scoring criteria, intended to represent "mastery," were also pre-established. The Exhibit 2 flow-chart summarizes the operation of the system.

In evaluating the project-developed lessons, the design employs a four-part post-test of randomly-selected items from the criterion tests also developed. The role of the individual criterion tests (progress checks) is formative. They permit feedback, teaching the aspiration of "mastery" (deemed necessary for adequate concept formation) and individualization of practice. In order to equalize the practice, this

EXHIBIT 2
SYSTEM DIAGRAM


a. Student studies program and takes self-quiz.
b. Seeks help, if necessary (office or individual question in class).
c. Takes progress quiz (for which correct solution is immediately available).
d. Grader provides feedback (available next day--BETWEEN classes).
e. May take make-up--before, (during), or after next class.

feature of the system would be implemented for all groups. In order to assess the value of the modular use of the new lessons in a conventional setting, all groups, including those accustomed to the system's flexibility (PP and PT), would be required to take their first test on each topic on the day set by the schedule of the conventional treatment. Choice of assignment material and other details of the PT and TT treatments were to be planned by the instructor for the conventional pair.

The part-scores related to existing materials were to be compared by a series of one-way analyses of variance. Two-way analyses of variance would test whether significant differences arose from the modified conventional and system treatments and/or from interaction of the treatments with the introductory instruction.

It was also planned to collect three aptitude measures: (1) grade in freshman English composition, (2) grade in freshman mathematics, (3) CEEB-verbal score for each student. These measures and the scores on the sub-tests were to be inputs to a CRONBACH Treatment-Aptitude Interaction model of analyses. This model involves regression analysis of performance socres by aptitude levels within treatment groups to see if treatments differently affect performance of subjects possessing different aptitudes.

The Actual Evaluation Attempt. Discussion of the developmental effort has already revealed that the cooperating teacher was unable to have a semester of experience in which to learn from his mistakes. This teacher, a Master's degree candidate in Accounting, was recruited in late November of the semester preceding his participation. He had had military experience as an instructor, only. However, he was at once put on the payroll and asked to familiarize himself with the textbook, the project-developed lessons and as much of the existing program as he deemed worthwhile, and the progress checks and their criteria of mastery for all lessons. He could initiate such other discussions as he deemed useful.

While trying to make it clear that the decisions on his instructional strategy were entirely his to make, the PI made every effort to call to his attention the importance of familiarizing his students with those instructional and testing formats which were not part of his textbook's presentation. The rationale for the system elements was also thoroughly explained. So far as could be observed, his response was conscientious, capable, and enthusiastic. There is no doubt that the cooperating teacher understood that his students would be tested by items drawn from the criterion tests. He was also clearly convinced of the cumulative character of most of the course.

The decision of the Department to designate the sections taught by the PI with special numbers (Appendix A, p. 3) could have effectively cancelled the evaluation effort. After registration the two sections in which the system was to be employed had a total of eight enrollees. When this problem was explained, the teacher willingly volunteered to invite students of his large sections to cooperate with the experiment (for which the notion of controls was already essentially nonexistant) by changing into the sections using the system. He obviously did so enthusiastically - explaining at the same time that any volunteer would be welcome to change his mind. Twenty-five students volunteered. Three decided to return to the conventional sections. After the ADD-DROP period the total enrollment in the system pair was twenty-seven students. Sixty-three students were enrolled in the conventional pair of sections. Of course one must assume that a systematic bias was introduced by the exercise of student choice.

At the time of the mid-term examination some students in the system treatment had completed all of the pre-project lessons and all of these topics had been assigned in the conventional classes. Not all of these topics were tested at mid-term. 13 students from the system pair took the mid-term examination, 54 students from the conventional pair took the test. Not all of the system students had passed a progress check on the last topic tested. (One of two perfect mid-term scores was earned by such a student.)

Mid-term consisted of four sub-tests on the following topics:

(1) Transaction analysis and recording
(2) Closing the books
(3) Financial statement relationships
(4) Effect of adjusting entries

Unlimited time was allowed for completion of the test. Total and part scores for the two groups were compared in a one-way analysis of variance.

The test is reproduced in Appendix B (pp. 1-6). Attention is directed to the scoring. Although the part scores are unaffected, the use of a "bonus factor" in determining a total score is considered to be significant. The effect is to assign much more credit to a given performance when it is part of a consistently correct effort.

The rationale for this unorthodox grading is as follows:

1. What is treated as important for grading tends to over-ride any other message about what is worthwhile. In other words, it is a primary vehicle for task definition.

2. The task is that of creating a correct record (as a demonstration of understanding necessary to the interpretation of reports based on similar records) and only essentially-correct records are useful.

3. The terminal behaviors of each lesson in this portion of the course tend to be prerequisite behavior for learning nearly all subsequent lessons.

4. As a consequence of 3, mastery of one sub-task in no way compensates for deficient performance in another. (Instead, one missing element is usually sufficient to prevent mastery of any subsequent task.)

It is important to recognize that what is reinforcing is an individual matter, and that a grade of C, and sometimes even D, may satisfy an aspiration. The problem seems to be similar to teaching correct spelling. While one would wish to acknowledge successive approximations of the correct spelling, it would be fatal to count the proportion of correct letters in wrong responses and to call an average 75%, or even higher; satisfactory correct spelling. The practice of assigning no part-credit for the various sub-tasks, which is characteristic of all the scoring of the evaluation instruments, derives from the above analysis. In the opinion of the PI, the prevalent, contrary practice is a serious mistake (one which he made many times before his involvement with instructional technology). It would appear that conventional practice "teaches", by reinforcement, that crippling deficiencies are adequate.

The scoring which was used is a compromise with the need to preserve understandability of the scoring process. This opened the door to flaw-picking by those who achieved high, but imperfect, performances. The PI experienced no problem in this regard. However, the cooperating teacher did. It seems clear that he inadvertently reinforced this criticism. Probably he felt it to be justified. He also seems to have presented it as something for which he was not responsible. Clearly, he did not recognize the three responses that may be made to the criticisms which are of the general character "by not allowing me credit for that 'one-point' item, I lost twenty points on my total score." The first response is that the absolutely-large difference is insignificant because A's were assigned to all cases where this phenomenon could occur. Furthermore, the difference can result only from the mistake in question PLUS some other errors. A person making one mistake, only, could not fail to get the maximum bonus factor. The third response which should be made to this complaint is that the large difference can only occur when the student has many times received positive bonuses for "one-point" items which he answered correctly. Significant class time was given to airing of these naive analyses of these rarities. Apparently, this tended to convince many for whom the bonus factor had little or no numerical effect that they were, somehow, being victimized.

The use of the mid-term examination is inconsistent with the operation of the system. It was used only because the post-tests required by the research design were too time-consuming for only a final examination. The system could be expected to operate much better if all instruction were individualized rather than in the essentially hostile conventional environment. Comparing to conventional instruction forced compromises which were awkward and unfortunate. In the normal operation of the system, the project-produced lessons would be the next assignments for several students. On the other hand, students are permitted to postpone the learning of one or more of these topics until after classes end. This provides flexibility by permitting about two weeks more time for additional students to complete the materials which enable them to participate in several weeks of classes. These classes utilize the textbook for group instruction on several advanced, more modular, topics. In addition, still less advanced students may use the several weeks devoted to group-paced instruction to achieve completion of those topics which some had completed by mid-term. There are also points at which, having completed the prerequisite material, a student may join the class for the remaining group-paced topics. Of course even this degree of flexibility is trivial when compared to the magnitude of individual differences. In summary, the research design curtailed some of the flexibility that is normal to the system.

In order to accommodate the system feature that those-who-needed-to might use the time of group-paced instruction to complete the prerequisite self-instruction, the coverage of project-related topics was placed in the last two weeks of the semester. This was obviously not ideal. It made more important the maintenance of some of the terminal behaviors of the last part of the pre-project lessons. The program includes materials intended to be a reminder of details previously learned. It was not expected that the materials could teach what had not been learned. Where conventional instruction was to be used, the instructor needed to recognize that part of the criterion performance involves the use of previously-learned behavior.

Mid-term examination results will be carefully considered under Findings and Analysis. However, the knowledge that students from the system showed very superior performance is a necessary perspective for the interpretation of subsequent events. The median score from this group was at the ninetieth percentile of the conventional group. It is also pertinent that several system students did not take the mid-term. Two of these were hospitalized; two mixed up the date. In only one case did lack of progress suggest that the student's mid-term score would have been inconsistent with the performance of those present. The conventional teacher reported that "several" students had not taken the mid-term. However, only one of these took the final examination.

The conventional teacher recognized his problem to the extent of expressing uncertainty as to what to do. A conference was held, and the PI, without suggesting a standard, cautioned against the consequences of seeming to accept a performance which would leave a student totally unready to cope with the project topics. A re-test was suggested and the conventional students were ultimately given this option. Only a few who took the make-up test (fewer than half) improved their performance significantly, according to their teacher's report. At the same time, he expressed disagreement with the view that a substantial proportion of the scores indicated deficiencies which would require unavailable remediation before the student could benefit from current and future instruction. At this point the PI, nevertheless, was more than satisfied with the participation of the cooperating teacher - this feeling continued.

The next major activity was the collaborative selection of items for the final examination. As in the case of the mid-term examination this was done randomly. In recognition of the time constraints applicable to the grading of final examinations, it was mutually agreed to select final exam items which could be answered on an objective answer sheet whenever such a criterion test existed for a lesson. It was further agreed that this progress check would not be used as the first one on a topic, since it was expected that all students would take this one. Otherwise, this progress check was available to use as a make-up for its lesson. The day for the first use of each progress quiz was determined randomly. Following the first four days, a student might be given any progress check which he had not taken before. The fact that some students had seen some of the final examination items before could not have a large effect. No student saw any post-test item related to the topics of Petty Cash or Bank Reconciliation. At the other extreme, approximately one-third of the students had taken the progress check from which the final examination items on the "Cost of Borrowed Money" topic were drawn.

The small number of students in the system sections, who were also unevenly divided, made it pointless to follow the original research design. All students of the system-pair used the new lessons during the attempted evaluation. The make-up of the groups had changed as follows: Eight conventionally taught students had withdrawn. One who did not take the mid-term did take the final. Of the system students who had taken the mid-term, one had to reduce his load because of illness; another quit school to accept a job with the FBI. Two people who had missed the mid-term examination continued the course and one student was added by transfer from another section just following the mid-term (a very unusual event). Only the individualization of the system made this possible.[1]

The comparative testing began with a disaster. The first quiz on the Bad Debts topic was too long by nearly 100%. Only one person in each of the three groups met criterion despite the fact that many more than half of the students continued working well beyond the end of the scheduled test period (a normal practice, but one not intended to be necessary). It also developed that the process called for by the first test requirement (on a review topic) had never been illustrated by the conventional teacher or text - despite the fact that a similar requirement was part of the sub-test already selected for the final examination copy. There were many adverse consequences of such a beginning. Besides the negative reinforcement of not passing, the preparations for processing the papers were nearly overwhelmed. Although the mistakes were identified and a score assigned to each paper by the following afternoon, the quality of the feedback provided was much less than the usual standard. It was more necessary for the student to consult a correct solution and to seek clarification where he did not understand it. Further, despite the provision of extra solution copies, there were still waiting lines. (Usually each paper can be converted to a correct solution by the grader.) In this respect, the smaller size of the system-pair group was an advantage. Their learning of how to make efficient use of the feedback was perhaps even more significant. Although not always prior to the final examination, all but one student[2] of the system-pair eventually passed a progress check for each lesson. For the first time, this occurred no later than the third attempt in any case.

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[1] Although this student's score is not included in mid-term data, he did take this test as a part of a review several weeks later. His score was then two points lower than the poorest system score on the actual mid-term. His data is included in the final examination scores where his total was the third highest in the class. His original teacher assessed him at a C/D level of performance at the time of transfer.

Although it is tempting to emphasize the bad luck of the selection of the worst possible first quiz, there was too-little ultimate success among the conventionally-prepared students for this to be a primary explanation. In the TT treatment only 6 of 21 students eventually succeeded. While things proceeded serenely for students of the system-pair, most students of the conventionally prepared groups, while improving, experienced little or no success.[3] In the TP treatment, there were only three attempts on the last set of progress checks; there were five in the TT treatment. (One small ray of sunshine - in the TP treatment there were six initial successes, to zero successes in the TT treatment in this last case.) There is little point in detailing the mounting disaster in the conventionally-prepared sections. Developments of which the PI was unaware are far more significant.

During this time the profoundly-important events affecting the outcome of the evaluation occurred without the PI's knowledge. The first of these was the visit of several conventionally-prepared students to the Department Chairman. They objected to taking the progress checks, let alone having to pass them. Although they reported to their teacher that they had been told that the progress checks "would not count", the Department Chairman characterizes his response as urging them to take the quizzes but assuring them that the results "would not affect their grades unduly!" Of course the language is unimportant. The behavior of most students is consistent with the first message. It is an essential of contingency contracting that the reward for satisfactory performance must depend absolutely on the occurrence of that performance; the pay-off must be available in no other way (Frieder, 3). It is probable that this assurance had irretrievable consequences. In any case the PI was not consulted. Furthermore, he did not even learn of the meddling until classes were ended.

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[2] This student missed the mid-term examination because of appendicitis. He did not participate in the comparative testing; but, among system students, there were two lower final examination scores. The last progress check he took was perfect. When he returned to campus to arrange for satisfying his remaining obligations, he reported being elected to the Board of Directors of a construction company the day before. He did not keep the appointment then made.

[3] The cooperating teacher felt that the review coverage in the Bad Debts progress checks was a principal reason for his students' poor showing. Recognizing the damage which the failures would do to confidence in other new lessons, the PI prepared the quiz on pp. 45-46. of Appendix B. It was a deliberate abandonment of the original criterion. Seven of the conventional-pair passes were on this test. It was failed nine times. One system pass occurred on this test.

The initial attempt on the combination progress check which tested Petty Cash and Bank Reconciliation was the sole activity of the last day of classes. The next day, Saturday, was the first of two "reading days." Final examinations began on the following Tuesday. Make-up sessions were scheduled for each of the reading days and it had been our prior experience that much use would be made of these opportunities. The PI was away from campus on the last class day and most of the subsequent weekend. Finding, upon his return, that few students were using the second make-up session and that few had used it on the first reading day, he broached the matter to the cooperating teacher. One reason was conflicting reports from conventionally-prepared students about his progress check requirement - initially announced as "all must be passed." PI then learned of the intervention described above. He also found that the cooperating teacher was working on his own version of the final examination. It developed that he had been instructed to do this by the Department Chairman. He said the matter had been taken out of his hands. He had announced to his classes, at the last meeting, that he would prepare their final examination.

He was trying to produce a comparable exam. Some parts were unchanged. In others there was only a slight rewording of instructions. This revamping of the post-test was not then complete but it later developed that the sub-test on Cost of Borrowed Money had had certain requirements removed, the format altered and an event from another topic substituted for one from the topic being tested.

In an interview with the Department Chairman, the PI was told that there was no firm decision to substitute the altered post-test, but that he would have to convince the Department Chairman that the substitute test was not equally good. This conversation took place two days before the final exam for the system-pair. (For the first time in over twenty years, the various sections of the elementary accounting course were scheduled to meet other than at a common hour.) It had been arranged that a few students from the conventional pair of sections would take their final at this time also. It was decreed that these students would use the new version of the final examination. A decision about which version would be taken by the bulk of the conventionally-prepared students would then be made.

Probably because there was no way to produce a seemingly-comparable score for the Cost of Borrowed Money sub-test, the PI's judgment was accepted (at the cost of being labelled "uncooperative"). The idea that significant differences can not be identified by inspection was never entertained! The administration of the post-test was otherwise uneventful.

Findings and Analysis - Self-Instructional Materials

A subsidiary objective of the project was to compare the effectiveness of existing programmed lessons with conventional instruction. The observations related to testing the hypothesis that chance explains the difference in mean performance between groups taught by the different methods were collected at two points in time, mid-term and the final examination. The sub-test scores are not combined into a total, because the make-up of the groups had changed substantially. Because the assignment to treatment was not random, the differences in group characteristics, as measured by the aptitude variables collected for the interaction analysis, is of special interest. It is necessary to acknowledge limitations on these aptitude measures. As an aside, these difficulties represent one more indicator of the substantial change which has taken place between the time of proposing this project and its completion. Here, as in all other instances, the unexpected departures from the ideal world which a research design attempts to approximate are entirely in the direction of introducing difficulties into efforts to apply science to the improvement of instruction.

The aptitude variables. The least defective of the variables is the verbal score from the College Entrance Examination Board test (CEEB-verbal); There were only two problems with this variable. A minor one is the recently introduced rule at other colleges who send students to the University of Massachusetts under the "Five College Cooperation," that grade information may not be reported without the written permission of the student. The other reason for missing data is also new. It results from the substantially increased number of transfer students, who are not required to take this test upon transfer. If taken elsewhere, it may or may not be available.

The problem with both the other variables, which are great, derives both from the proportion of transfers, which aggravates the problem of differences in teacher judgment, and from the very great increase in the choices allowed for the fulfillment of University core requirements. The variable which we designate FRESHMAN ENGLISH GRADE is especially affected by this relaxation. Whereas we had expected to have a grade in a composition course required of all freshmen, we now have whatever the student has chosen among courses which emphasize writing or speaking or listening to somebody talk about speaking, to mention only a few. It seems likely that lack of the aptitude we intended to measure will have prompted the student to elect an option where that behavior is less important. The variable which we designate FRESHMAN MATH GRADE, while coming from many different courses and institutions, is judged to be less defective as a rough indicator of quantitative skill. (Nevertheless, one notes such contradictions as an individual with an F in calculus and B in "Math and the Modern World.")

In quantifying the grades, the values by which they are included in determining a grade point average are used. Even here, rule changes complicate the problem. In the last year, only, grades of CD (point value = 1.5), BC (2.5), and AB (3.5) have been added to the former scale ranging from 0 to 4.0. Most of the grades were awarded under the former system, but the existance of some of the new grades seemed to force the inclusion of the intermediate values. Obviously, some proportion of the grades awarded under the old scale would have been awarded an intermediate grade had the option existed. Finally, the use of grades awarded in different academic years introduces a degree of noncomparibility because of the accelerating trend, both national and local, to award higher grades to the same performance. When a failure was repeated, the F grade, rather than the subsequent passing grade, was taken as a measure of aptitude. A case can be made for the opposite choice.

Topics Previously Programmed - Aptitudes of Treatment Groups. The data is reported subject to the foregoing reservations. At the time of the mid-term the system taught students had a mean CEEB-verbal score of 562 with a standard deviation of 82. The 44 conventionally-taught students for whom data was available had a mean of 493 with a standard deviation of 100. As measured by the analysis of variance, the F ratio (5.44) is significant beyond the .05 level (F = 4.02); but is well short of the .01 significance level. The difference in FRESHMAN MATH GRADES is similarly significant. (F = 5.07). The mean value for system students is 2.93 with a standard deviation of .98. The 49 conventional students have a mean of 2.18 with standard deviation of 1.18. The F ratio of the FRESHMAN ENGLISH GRADE did not approach significance, perhaps because of the defects mentioned above. The system students did have the higher mean (2.87 with a standard deviation of .74 compared to a mean of 2.59 and a standard deviation of .89 for the 48 conventional students on whom data was available). (The same pattern applies to the smaller number of students who participated in the final examination, although the mean differences have been somewhat reduced by attrition from the conventional sections.) It is certain that these differences are aggravated by the unavailability of aptitude data on the three conventional students from Amherst and Smith Colleges, but their inclusion could hardly be expected to alter the observation of significantly unequal aptitude. Nevertheless, the inclusion of scores earned by these students in the performance data does add to the difficulty of demonstrating superior performance under the system treatment.

Topics Previously Programmed - Performance Differences. The small number of students in the system treatment also poses a substantial barrier to the demonstration of statistically significant performance differences. As the following tables show, the differences fail to reach the .05 level of significance only in the case of sub-test 3, where it failed by .69 to reach the necessary F of 3.99. However, these comparisons,

TABLE 1
One-Way Analysis of Variance of
Subtest Scores Given at Midterm

Sub-Test	Treatment	N	Mean	F	Significance Level
1	Conventional	54	25.7		
	System	13	31.0	7.62	.01
2	Conventional	54	3.83		
	System	13	9.15	40.57	.01
3	Conventional	54	9.67		
	System	13	12.15	3.30	N.S.
4	Conventional	54	6.31		
	System	13	7.84	7.09	.01

Subtest Number	APPENDIX B pages	Topic
1	1,7,8,9	Transaction Analysis and Recording
2	3,4	Closing the Books
3	5	Financial Statement Relations
4	6	Effect of Adjusting Entries

TABLE 2
One-Way Analysis of Variance of
Subtest Scores Given on Final Examination

Sub-Test	Treatment	N	Mean	F	Significance Level
5	Conventional	46	10.02		
	System	14	15.64	6.69	.05
6	Conventional	46	3.39		
	System	14	6.43	19.91	.01
7	Conventional	46	4.89		
	System	14	7.57	19.97	.01

Subtest Number	APPENDIX B pages	Topic
5	11	Merchandising
6	12-13	Making Adjusting Entries
7	16	Financial Statement Classification

which would be extremely favorable if there had been random assignment to groups, are confounded by the known superior aptitudes of those in the system treatment.

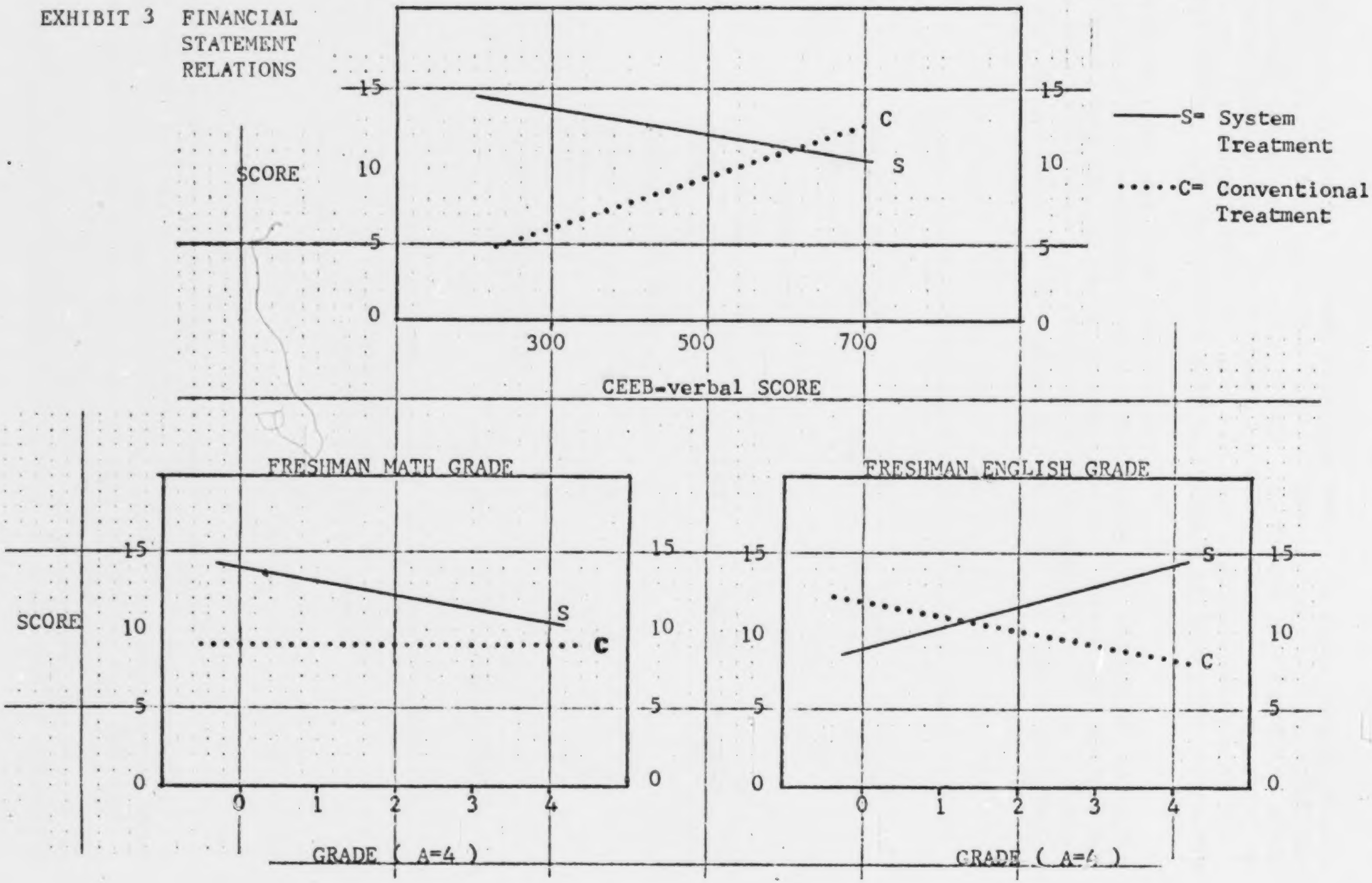
Fortunately, the treatment-interaction analysis can indicate whether the performance is due solely to the superior aptitude of the system students or whether, when aptitudes are equal, there is a difference attributable to the difference in instruction. As indicated earlier, the inclusion of this analysis in the research design was motivated by the possibility that different aptitudes would be revealed as indicators of the appropriateness of different instructional methods. In fact, there are few contradictions of the conclusion that the system fosters equal or better performance at all levels of aptitude. Appendix C provides additional results of the treatment-interaction analysis.

For purposes of this exposition, the results of sub-test 3 (Table 1) will be used. They are shown in the three graphs on the opposite page (Exhibit 3). Each line is a regression showing the average score predicted for a treatment at the observed aptitude levels. Subject to error measurement, the point at which the lines cross is a point of indifference - the treatments are equally effective. To the left and right of this point there is an increasing likelihood that a student will learn more if taught by the methods whose regression line is higher on the Y axis. Thus, the interpretation of the top graph is that (for learning Financial Statement Relations) a student whose CEEB-verbal score is less that 625 is somewhat more likely to benefit from the system than from conventional instruction and that this likelihood increases as this aptitude diminishes. Of course, individual students with somewhat lower aptitude scores would do as well or better under conventional instruction; but when a student has a score of perhaps 400 or less one can say that his aptitude rarely enables one to do as well under conventional instruction. Perhaps a more pertinent interpretation is that conventional instruction is no disadvantage when verbal aptitude is high. Extrapolation beyond the data (690 top score) should be done with care. It is certain that an 800 verbal score would never enable a student to exceed the maximum possible test score of 15. The lower right-hand graph suggest a tendency for students who earn high English grades to benefit more from the system than from conventional instruction. The ambiguity of this variable should be borne in mind and any interpretation may be useful only as an illustration of the kind of conclusions that prompted the planning of this investigation.

In fact, the graph at the lower left is illustrative of the typical results obtained. That is, over the relevant ranges of Math aptitude more of the people benefited more from the system. In other sub-tests of the mid-term there is no exception to the pattern of dominance by the system at all levels of aptitude for all aptitude measures used. This dominance is equally true for the other sub-tests on the pre-project topics - those that were given as part of the final examination.

Graphs of Regression Lines for Each Treatment Against Three Aptitude Measures

EXHIBIT 3



Project-developed Topics (Aptitudes). With the exception of one verbal score, there is no missing aptitude data on students of the system pair. On 24 of the 26 students who used the project-developed lessons after conventional preparation the data was also complete - only the students from the other schools being unavailable. The table below shows the various numbers of cases in which data was available on the 21 students receiving conventional instruction entirely.

TABLE 3

Aptitude Characteristics of Treatment Groups for Evaluation of Project-produced Lessons

	ALL SYSTEM	ALL CONVENTIONAL	COMBINED
FRESHMAN ENGLISH GRADE			
Sample Size	14	18	24
Mean	2.86	2.56	2.48
Standard Deviation	.77	.71	.95
FRESHMAN MATH GRADE			
Sample Size	14	19	24
Mean	2.93	2.18	2.08
Standard Deviation	1.02	1.26	1.19
CEEB-VERBAL SCORE			
Sample Size	13	16	24
Mean	556.9	479.4	512.1
Standard Deviation	83.0	112.6	78.6

Although the system students continue to show higher aptitude and although the F-ratios for the FRESHMAN MATH GRADE and CEEB-verbal scores are much higher than for the FRESHMAN ENGLISH GRADE, none of the differences reach the .05 level of significance. It was also established that the All-Conventional and Combined groups did not differ significantly on their mid-term test scores.

Performance. The performance results continue to show large advantages for the all-system students. This was true without exception on the first-attempt scores; differences were significant at the .05 level in all cases and at the .01 level in two. Of course this group was vastly superior in the most important respect, that of achieving an acceptable indication of mastery on some criterion test. In terms of the performance required of all students in the system treatment, passing each progress check, only one of the all-conventional students succeeded. Four persons who had the new lessons (combined treatment) passed all progress checks, but this number is so small as to have little significance.

After the interference of the Department Chairman, the PI would have forecast insignificant differences on all comparisons between the conventional pair of sections. Astonishingly, this was not quite the case. The following table presents the comparison of final exam scores and one-way analysis of variance for the different treatments attempted with the project-developed lessons.

TABLE 4

One-way Analysis of Variance of Final Examination Scores on Project-Related Topics

Sub-Test	Treatment	N	Mean	F	Significance Level
1	All System	14	3.36		
	All Conventional	20	1.95		
	Combined	26	2.85	4.99	.05
2	All System	14	10.29		
	All Conventional	19	4.16		
	Combined	23	4.83	12.85	.01
3	All System	14	23.21		
	All Conventional	20	17.75		
	Combined	26	17.73	3.06	N.S.
4	All System	14	5.36		
	All Conventional	20	5.05		
	Combined	26	4.85	.35	N.S.

Sub-test Number	Appendix B pages	Topic
1	18	Accounting for "Bad Debts"
2	14-15	The Cost of Borrowed Money
3	19-20	Imprest Funds-A Petty Cash Example
4	17	Reconciling the Bank Statement

Despite the deficiencies noted earlier, the score on sub-test 1 (Accounting for Bad Debts) is significantly greater (.05 level) for the combined treatment than for those who received conventional instruction entirely. Moreover, this ranking reversed the order for these groups on the progress quiz which they first attempted, although the difference was then insignificantly small. The advantage of the all-system treatment over the combined treatment does not approach significance.

The other differences between these two groups are predictably negligible, although it should be noted that the small differences on sub-test 4 are substantially due to the rather high means (out of a possible 7) for all groups. This was the Bank Reconciliation topic. On the other sub-tests, the uniformly higher scores of the all-system treatment falls barely short of significance on only sub-test 3 (Petty Cash). An F of 3.19 is significant at the .05 level.

The treatment-interaction graphs are generally consistent with those discussed earlier in showing that, except where the post-test scores are not significantly different, the regression line for the system treatment dominates that for the conventional treatment throughout all, or nearly all, of the relevant range. Graphs for this comparison are presented in Appendix C.

Analysis of the University System

Purpose. The principal purpose of this project was to enable changes in University instruction which would eventually be profound. Instead, the experience provided a case study of resistance to change which, in the author's opinion, has many generalizeable elements. Most of these findings appear in Appendix A. The purpose of this section is to augment and interpret the findings which constitute Appendix A to contribute an explanation for the frequent observation that it is harder to move a university than to move a cemetery. Moreover, we shall offer an interpretation of practice which justifies the recommendation that if change is not possible, then any instructional function which resembles that of the School of Business Administration of the University of Massachusetts should be abandoned.

Other Critics. Since the reader may be unprepared to entertain the foregoing proposition, a demonstration that others criticize vigorously may be in order. In "The Job of a College President," Herbert Simon wrote,

> Today, most college classes are conducted as though Gutenberg had never existed. The teacher lectures (from the textbook, if the students have their way, so they need not read it), and the students occupy themselves with tediously and illegibly copying his words into their notes.
>
> Now, it might be that, in spite of Gutenberg, this is the most efficient of all possible processes

> for learning. But the evidence indicates overwhelmingly that it is a hopelessly inefficient - indeed, a nearly totally ineffective - process. (8)

What we shall demonstrate and highlight, Allen D. Calvin (2) has noted in the closely related field of economics:

> ... Our undergraduate economics education fails because we act as though the basic fundamental laws of behavior are somehow or other automatically suspended when one enters a college campus. Interestingly enough, many of these "laws" come out of the field of economics, and it is particularly amusing to see economists attempt to "suspend" the very axioms which they themselves have validated. It is these attempted "suspensions" that create the failures that we see around us, and until departments of economics themselves change, any tinkering with their programs is certain to fail.[4]

Managing the Behavior of Teachers. The attempt to suspend laws of behavior applies equally to most other college instruction. It is an axiom that behavior is the result of its consequences, and the implication is that universities are so structured that the consequences of ignoring learning deficiencies are more favorable for teachers than the consequences of the steps needed to remove the deficiencies. Most of these consequences are man-made, and this has a number of important implications. A most important one is that a choice exists. Although the obstacles are formidable, an institution could plan for consequences which would make learning important. The difficulty is that the necessary consequences are people-administered. Since the behavior of each person in a person-to-person interaction tends to influence the future behavior of his opposite number, but in an inconsistent way, stable and reliable consequences are rare. The author of "The Regulation of Behavior by the Behavior of Others," (Semmelroth, 7) summarizes as follows:

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4. Reprinted from Recent Research in Economics Education, by Allen D. Calvin, edited by Keith G. Lumsden, by permission of Prentice-Hall, Inc., copyrighted 1970. Permission to reproduce this copyrighted material has been granted by Prentice-Hall, Inc. to the Educational Resources Information Center (ERIC) and to the organization operating under contract with the Office of Education to reproduce ERIC documents. Reproduction by users of any copyrighted material contained in documents disseminated through the ERIC system requires permission of the copyright owner.

People are poor managers of other people. Their interactions tend to be characterized by instability and/or the excessive use of punishment. Written rules or laws of political institutions tend to reduce the instability arising from the above considerations. Ideally laws function in exactly the same way as the physical world functions, i.e., as a non-adaptive administrator of consequences. However, management of behavior change in educational and business institutions tends to be based on people-administrators of consequences. Stability, when it occurs, is often attempted through the assumption of "thing like" characteristics by one or more of the interacting people.

There are various techniques which are commonly advocated by teachers of teachers, supervisors, and parents to circumvent the instability and consequent ineffectiveness of ordinary interactions of all these people These techniques tend to be variations on one theme: Behave according to a rule or algorithmic decision process. Setting up rules and enforcing them, reinforcing only improvement in performance, and consistently punishing performance deterioration can all be effective methods of successfully managing behavior change. However, these procedures all rely on the manager being essentially impervious to the consequences of his own behavior. He must imitate an algorithm in response to a student, child, or employee. In doing so he changes the interaction from a person-to-person into a person-thing interaction of the sort described above. He becomes a thing-person!

Thing-people are, of course, mythical creatures. No one is capable of ignoring the consequences of his own behavior. People as managers of behavior may also be mythical creatures if effective management assumes that we can ignore the consequences of our behavior. Because teachers, parents, supervisors, and even psychologists remain people-people despite any effort to become thing-people, the problem of managing behavior change by managing consequences is mainly a problem of managing the behavior of the behavior changer, of the supervisor, the teacher or the parent.[5]

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[5] Reprinted from "The Regulation of Behavior by the Behavior of Others," NSPI Journal, Vol. IX, No. 8, October 1970, by Carl Semmelroth, by permission of the National Society for Programmed Instruction, copyrighted 1970. Permission to reproduce this copyrighted material has been granted by the National Society for Programmed Instruction to the Educa-

The behavior of people in the university system is a product of their own perceptions of the consequences their behavior will yield. It does not matter what others either perceive or intend these consequences to be. Of course, Appendix A is the PI's perception of the instability of consequences, the lack of information about when and how consequences will change, and of the very punishing process imposed on a University of Massachusetts faculty member who attempts to establish, objectively, what the new policies governing consequences are. In part, the process is unresponsive because there are no perceived favorable consequences counteracting the burdensome character of the essentially-judicial grievance subsystem. Even hearing the evidence is a low priority activity for those who, IF THEY AGREE TO, must do so.

The University functions as though quality of learning depends solely upon the teacher. This severely contradicts the laws of learning, first, because maintenance of standards would require the teacher to function as a "thing-person" and secondly, because many of the most important elements of the system are beyond the teacher's control. That is, where students may make choices a teacher may not impose a combination of rules which students regard as more burdensome than those of some other option which is available to them. In the majority of cases, the student is solving an economic problem by allocating his scarce time among the options for securing credits toward graduation. Thus, in a required course taught by several teachers, one teacher demands the extra time that more learning requires at the expense of losing enrollment. (And even students who are willing to pay an extra time-price for more learning have little means of determining what the learning differences are. Moreover, one may not be able to "afford" more learning that he might desire. Non-academic demands for time limit academic choices.) In the case of a elective course, a time-premium may be charged (those able to "afford" it) only to the extent that the course represents a differentiated product - that is, has content perceived as having extra worth. Needless to say, the interaction is that enrollments are important to teachers. There is a strong unbalanced pressure to accept deficient student performance. Moreover, a teacher's response to this pressure need not be conscious at all. Meaningful communication about standards, indeed even the necessary behavioral language, is lacking. Successful communication can be burdensome, but obviously initial attempts are not reinforced when the communication does not occur. It is impossible to cooperate in maintaining standards when these standards are not mutually understood.

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The Cooperating-Teacher Example. Response to pressure and communication failure seem the best explanations for the altered attitude of the cooperating teacher at the end of the project. (The PI did learn from a colleague that this teacher had expressed the opinion that, so long as a diploma was vital to securing employment, almost any student who persisted should receive credit for a course. However, he did not pass every student who took the final, and the writer is inclined to regard this as a rationalization.) Communication failure was clearly present, despite the provision of the progress checks, solutions and scoring as operational definitions. After we had selected the mid-term items, the cooperating teacher remarked that he could see "some of the problems" and asked if it was all right to give practice on similar items. He did. He also asked questions about solutions to some of the project progress checks which indicated that he had not treated them as goal statements before conducting his classes. Of course this was a very large task, but it also calls for skills which are not possessed by the typical university instructor. When pointed out to him, he acknowledged that the plan was to teach to the test-embodied objectives, not to test objectives which he had formulated. Ultimately, however, his requirements and grading substituted his own nebulous objectives for those of the progress checks.

Like most instructors, the cooperating teacher did not think in criterion terms. When he began to imply that he might not enforce the original plan, neither students nor the PI could get more than, "I haven't decided what I'll do." When, after grades were in, the writer asked, "Wouldn't it have been reasonable to require passing of one or both progress checks which other classes have passed with only textbook aid?", the reply was, "I haven't thought about it." (In fact he gave no weight whatsoever to progress checks.) It is a general failing of teachers to ignore the significance of what students can not do. (The PI is unable to say how specifically the Department Chairman may have instructed the cooperating teacher.)

One of the things attempted in a final two-hour interview was to elicit the features of final examination items which had prompted the cooperating teacher to make a substitution in his version. (Sometimes the portions changed were irrelevant to a response.) He was very defensive when asked for more than, "I thought it made them clearer."

Throughout this interview there was great stress on the fact of student frustration. It was, of course, compounded by failing to recognize and communicate the true magnitude of the mid-term deficiencies. Our disagreement is with the wisdom of responding with false appraisals, rather than more time to achieve. (See Appendix A, p. 15) The defect with the former is that it minimizes the incentive for remedy. Any instructor in the present university system is assigned two utterly antithetic roles, the helpful coach and the evaluator. The cooperating instructor's resolution is typical. Response to the pressure is largely unconscious. It is much facilitated by not having decided what is essential. Furthermore, without a clear rationale a teacher may tend to accept such faulty criticisms as were made of the mid-term examination scoring (p. 14). In any case, he will tend to leave the critic feeling justified.

One question of considerable interest is whether the conventional results would have been much improved had the cooperating teacher had the semester of familiarization which was part of the original plan. In many respects he had, at the end of the evaluation semester, the experience with which he should have begun it. Its function in the design was to allow him to benefit from mistakes of strategy and emphasis. The PI would regard his reaction to the mid-term (the test, not the results) as promising. However, in the terminal interview he indicated that if he were supposed to participate in another evaluation semester, he would do his best to be excused. There was no indication that he felt he could do better. Although he could have revised his tests and grading to define the required competencies more clearly, his apparent assessment is, to an important degree, correct.

Two Non-Teacher Factors. There are insurmountable reasons why individual teachers, including the cooperating teacher, do not manipulate the consequences of learning versus not learning to maximize the former. Either of the two most important would be sufficient, in itself, to dwarf in importance a teacher's best efforts. The first is the way that the facts of individual differences result in a very great range of time needs for the accomplishment of the same level of learning within a single class. At the extremes these differences have been estimated to differ by a ratio of 20, or even 30, to 1. Taking the conservative approach of eliminating the five percent at the extremes, one study (Huson, 5) found that the time spent by some 13 year olds to complete their mathematics homework was six times greater than the least amount of time required by others. This clearly means that there is no possible way for all, or even half, of the members of a class to progress uniformly through a meaningful amount of learning by means of the extra efforts of those who need the higher amounts of time. Thus, the rigid amount of time-allowed-for-learning by semesters and their counterparts preempts the principal opportunity for facilitating learning. Instead, the criterion of a worthwhile achievement on the part of an average student is made severely punishing for the large fraction of students who are less ready or able. (To return to the earlier economic analogy, these students cannot afford to learn more. They have barely enough time for the least-demanding schedule.) A second fact which the individual teacher cannot overcome is that the average untrained listener gets only about twenty-five percent of an oral presentation (9). With the facilities available to him, the individual faculty member is usually unable to choose a channel of communication for his classes that is not characterized by this severe handicap.

In order to understand what follows, it is necessary to appreciate fully the pressures under which the college instructor operates. Notably there is the superstition that the teacher is an overwhelmingly important variable in the learning equation, and the outrageous presumption of an administration which, while contributing most to the prevention of learning, supposedly evaluates the teacher on outcomes which they, rather than he, are most able to alter. Of course it must be admitted that the teacher, in his conceit, aids and abets the mythology of his omnipotence. Simon has put the explanation well. He states, (8) "Comparing colleges to other organizations in our society, one sees that their most striking peculiarity is not their product, but the extent to which they are operated by amateurs." As we return to an examination of the details of the amateurish behavior of teachers, let us bear in mind that professionals know that teacher behavior is a product as much as it is a cause. The University instructional system often has neither assumption, organization nor talent for securing effective instruction.

Some Local Evidence. That the School of Business Administration does not succeed in spite of itself was unmistakably shown by the deficiencies summarized in Exhibit B of Appendix A (page 23). By failing to take any action when the information in this exhibit was presented, the School administration chose (not "wished for") a continuation of these outcomes. A careful look at the test on the first accounting course (Appendix A, p. 6) reveals more devastating outcomes which the Accounting Department has chosen to perpetuate. Here is a summary measure which demonstrates that the differences between an early version of the system and conventional instruction were important. Exhibit 4, below, consists of two matrices derived from factor analyzing some of the data collected by the testing committee.

EXHIBIT 4

Factor-Matrices of Performance and Other Measures of Conventional and System Students, February, 1970

Variable number	Percent Variance Explained							
	Conventional					System		
	23%	6%	2%	1%	0.5%	28%	7%	2%
1.	-0.08	0.51	0.13	0.12	-0.01	0.55	0.30	0.03
2.	-0.24	0.18	0.18	0.16	-0.24	0.52	0.10	-0.14
3.	-0.10	0.23	0.10	0.50	-0.06	0.46	0.26	-0.25
4.	0.09	0.50	0.03	0.31	-0.14	0.61	0.23	0.09
5.	-0.37	0.28	0.37	0.24	-0.13	0.23	0.64	-0.24
6.	0.41	-0.33	-0.36	-0.40	0.02	-0.27	-0.63	0.25
7.	0.06	-0.04	-0.37	-0.04	0.03	-0.41	-0.07	0.04
8.	-0.45	-0.03	0.07	0.03	-0.03	0.01	0.17	-0.43

Variables 1 through 4 are subscores of a test on accounting fundamentals; variable 5 is data on grade point averages, variable 6 is the grade earned in the course on which the students were being tested, but with the low value given to the A grade (hence, the consistently opposite sign of the factor scores for variables 5 and 6). Variable 7 is scaling of the "equally/before/after" answers to the question of when the student felt more successful. The "before" answer designated the period during which one group used the programmed lessors. Variable 8 is a report of average preparation time per class.

Two points are clear. In the conventional group, academic ability was the most important factor, while knowledge of accounting was the most important factor among the system students. In the latter group much less of the variance is explained by the academic ability factor. The second noteworthy point is the absence of any single factor for knowledge of accounting in the conventional group matrix. The failure of the subtest scores to cluster into one factor strongly suggests conceptual deficiency. Essentially similar definitions and structure underlie each of the subtests.

Results on one of the subtests (variable 2, in Exhibit 4) provides particularly devastating evidence. Exhibit 5 contains the instructions and half the items.

EXHIBIT 5

Part of Department Subtest of Elementary Accounting

REQUIRED: Indicate the immediate effect of the following independent errors on each of the accounting elements described in the column headings below. Assume the books are closed immediately after each independent entry. Use the following code:

+ overstated   - understated   0 no effect

	Accounting Elements					
Error	Net Income	Total Revenue	Total Expense	Total Assets	Total Liabil-	Total Owner's Equity
Example: A failure to record an investment by the owner.	0	0	0	-	0	-
1. Failure to record sale of services to a customer.	—	—	0	-	0	0 X
2. Cash received on account from a credit customer credited to revenue.	X 0	+	0	+	0	+

X identifies incorrect response.

To the right of the double line is the fundamental accounting equation which is a definition of total owner's equity. The relationship is:

(total assets - total liabilities) = total owner's equity

The items on the left are the elements of an equation which is a definition of net income. The relationship is:

(total revenue - total expense) = net income

These concepts and principles occur early in any elementary textbook. Virtually the entire course is built upon these relationships. They are clearly prerequisites to the learning of topics which occur later than the third week of the course. No knowledge of accounting is necessary to recognize that the equation can never be affected in certain ways, e.g., changed on one side of the equal sign and not changed on the other, as illustrated on the right hand side of Number 1. (Total owner's equity should be minus.) One need not read the example in order to identify such "impossible answers."

In a sample of the test papers, a search was made for "impossible answers." Only two assumptions were made: that the student noted that a single amount was either stated or implied and that the student could recognize that in none of the test items was the firm transacting business with its owner (as it is in the example event). (The assumptions eliminate as correct possibilities some combinations which maintain the equations.) When a student produced an "impossible answer" he was denying understanding of either a concept or a relationship. THE DEFECT IS INDEPENDENT OF WHETHER THE SPECIFIC EXAMPLE WAS FAMILIAR. Since a 100% correct response is the implied standard for the correctly learned concept, only random error need be allowed for in deciding that a student who gives impossible answers does not know these fundamentals.

How often did "impossible answers" occur? THE MEDIAN FREQUENCY WAS HALF OF THE TIME! Making the very generous allowance of regarding two impossible answers in eight as random, one could unmistakably reject the hypothesis that these fundamentals were understood in more than eighty percent of the cases! Yet this result was treated with seeming complacency (although, more likely, avoidance is involved). There is nothing here for the PI to boast of. Still, from a slightly smaller number of system students, the number of cases where the hypothesis of understanding could not be rejected was double that of the conventional group. What does help to account for general deficiencies is the fact that the University system rewarded the lesser performance. Moreover, it rejected a later improvement which cut the median frequency of impossible responses in half. (This was one of the accomplishments at issue in the personnel grievance described in Appendix A.)

We Can't Choose Conventional. Of course there might be a good reason for rejecting a particular means of improving performance. What cannot be defended is a preference for instruction which is not only very much less effective but also can never possibly succeed because of the incompatibility between individual differences and group pacing and due to the great inefficiency of listeners. It is an unmistakable feature of the University system that the question of whether students' learning needs are being adequately met is decided by a majority vote of those to whom the existing result is attributed. The laws of behavior do not suggest that this group will often find themselves wanting. When this same group strongly influences the personnel evaluations of individual members, these individuals are quite likely to be deterred from suggesting a general weakness.

One objection which is frequently heard does not apply here. That is the observation that for students to like what they are doing is more important than the learning of any particular subject matter. While Appendix A (pp. 8-9) points out that the assessment of what students like was very subjective and biased in one important instance, one may question whether it is sufficient for students to feel pleased if what pleases them is (often unrecognized) incompetence and irresponsibility. There is no question but that the more agreeable way of learning is better than the less, even at some sacrifice in efficiency. But too often, as with the conventional instruction for elementary accounting, what is approved is a great tolerance for non-learning. That is not to say that the students wish not to learn.[6] If they were good judges of what is adequate learning of a subject area, they ought not to be students. But what students are told is that they are in an institution of higher learning, not one of higher gratification. Course descriptions are about subject matter. There is no more justification for talking about cognitive learning, testing cognitive learning and planning cognitive outcomes, while delivering only reassurances, than there is for the activity of a cancer quack. Moreover, when a student accepts ineffective instruction for real help that is available or when the cancer victim accepts a palliative for needed surgery, the results are similarly harmful.

Needed: Criterion-Referenced Grading. One way to avoid communicating all of the harsh truth in education is the customary resort to norm-referenced grading, that is, grading on the curve or relative to how well others do. This is inappropriate for elementary accounting in two ways. One is that the course is required on the assumption that it will provide suitable entering behaviors for a number of later business courses. The other is the intensely cumulative nature of the course itself. (While not, alone, conclusive, the very different success of the all-system students with the project lessons is an observation tending to confirm this cumulative character.) Criterion-referenced grading is clearly appropriate. It has been argued

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[6] What they wish is not to be called a failure, or not to lose a scholarship or not to have to explain to parents, etc.

(Garvin, 4), that the question of which way to measure performance is not a matter of choice, but of the real-world significance of failing to learn to a certain level of competence. Specifically this author observes:

> There is a class of instructional objectives in which the extra-classroom task envisioned is to be performed in the next classroom. Many units of instruction are intended primarily to prepare the individual to undertake the next unit in the sequence. To the extent that it is reasonable to specify an entering level of competence for this next unit, this level is a meaningful criterion for the present unit, whether or not the next unit is, itself, criterion-oriented. This is true in any cumulative area. Mathematics and foreign languages are excellent examples.[7]

Appendix A is largely concerned with an attempt first, to gain consideration of what criteria should apply to elementary accounting and second, to secure a specification of any criteria at all. It is literally true that, "failure to pin-point or define behavioral learning automatically rules out any teachers' ability to plan for, guide, or measure learning."[8] (Burns, 1). It might seem, and is indeed often contended, that the needs of those courses which prompt us to require a prerequisite impose a criterion. This could be, but is not the case for two reasons. One reason is that the subsequent teacher has no means to overrule the "pass" decision of the teacher of the prerequisite course. The second derives from the interactive nature of the teacher-student encounter. The teacher will tend to adapt (standards more than instruction) to the ability of whatever class faces him. He can't help it. Norm-referenced grading helps him to avoid noticing the shift in the standard. This phenomenon is in large measure responsible for the increase in the University of Massachusetts grade point average from 2.26 in 1962 to 2.82 in 1971. The front page of the New Yo[illegible] Times for March 13, 1972 reports this grading trend as a national phenomenon (Peterson, 6).

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[7] Reprinted from Criterion-Referenced Measurement, article by Alfred D. Garvin, edited by W. James Popham, by permission of Educational Technology Publications to the Educational Resources Information Center (ERIC) and to the organization operating under contract with the Office of Education to reproduce ERIC documents. Reproduction by users of any copyrighted material contained in documents disseminated through the ERIC system requires permission of the copyright owner.

[8] Reprinted from "The Theory of Expressing Objectives," by Burns, R.W., Educational Technology, Vol. VIII, No. 20, October 30, 1967. Permission to reproduce this copyrighted material has been granted by Educational Technology Publications to the Educational Resources Information Center (ERIC) and to the organization operating under contract with the Office of Education to reproduce ERIC documents. Reproduction by users of any copyrighted material contained in documents disseminated through the ERIC system requires permission of the copyright owner.

In one sense there is no "real-world" consequence of failing to learn elementary accounting. Teachers of courses where it is supposed to make a difference adjust their expectations to what they are handed. It is a partial confirmation of this analysis that they are surprised by competence. In a more important sense, however, a real-world consequence of not teaching elementary accounting to an appropriate criterion is the deterioration of standards in many School of Business classes. (See Exhibit B, Appendix A.) The laws of behavior are not suspended when one walks onto a college campus. Teachers are being managed by consequences of their behavior, whether or not those consequences are anyone's plan. Unless the deterioration in standards is deliberate, it is the result of the failure of administrators to exercise their responsibility for enforcing learning objectives.

Faculty Behavior. Now let us consider the faculty member's response to his predicament in more detail. Its complexity represents a major barrier to the improvement of instruction. At the outset, a disclaimer. The PI does not vouch this analysis primarily as an observer. He has made these mistakes dozens and even hundreds of times.

It seems that the faculty member should be seen as believing, quite erroneously, that his students' success (really lack of it) is largely due to his efforts. Further, since students and his institution often make awards for good teaching, and he has little information about the instructional efforts and results of his colleagues, he assumes that a great deal of learning must go on in some classes. In a very human way it becomes important to him to find success in his endeavors. To do so, he must hide from himself the truth about the learning deficiencies in his class and/or define his goals in terms that can be fulfilled. The latter possibility probably has much to do with the emphasis on rote learning and on such indirect measures as student opinion, but it is the mechanisms by which the former is accomplished which pose the greatest problems for would-be innovators.

Managing a change in student behavior is a mutual enterprise. Faculty members need to do what most parents do naturally. That is, parents tend to collaborate to administer consequences in a non-adaptive way.

"What did your mother say?" is a familiar question. Even if father does not agree with the answer, he will neither overrule the decision nor disparage it. He may, of course, suggest to his spouse that she reconsider, but the child is ordinarily presented with a united front. As institutions grow, faculty find it impossible to imitate parents on an ad hoc basis. Unfortunately, too, they tend to be selected for their critical faculties. Their inclination is to engage in competitive rule-setting.

When several teachers are able to award the same three credits, the only hope for nonadaptive and consistent criteria for awarding the credits is unambiguous advance planning. University academic planning suffers severely from a confusion between good intentions and good performance. The Accounting Department's very convenient illustration of treating what is considered "essential" as neither necessary nor required is described in Appendix A (pp. 23-25). The sad fact is that the people engaged in this exercise were unaware of their folly. Powerful, but subtle, forces are necessary to produce this outcome among intelligent persons.

What happens to faculty members who commit themselves to learning outcomes which can be objectively assessed? The individual faculty member's answer, though incorrect in the writer's opinion, would tend to be that he must either endorse a high proportion of "impossible answers" or he must implement an 80% failure rate. He will be only vaguely aware of these implications because he does not have operationalized objectives; but, under the continual battering of faulty performance and the student's natural concern for grades, he is unlikely to be confident that his own lack of effectiveness is a norm.

Any consistent set of learning requirements is superior to any set of requirements which individual faculty might, and in fact must, choose alone. Moreover, the creation of any yardstick against which to measure present outcomes is threatening. There are many hazards tending to discourage the individual from establishing meaningful goals. It is a great deal of work, and the norms for faculty research and service contributions have been set on the assumption that instruction will require a modest amount of non-classroom time. Because there is no accountability, the individual instructor must assume that any learning increments that extra efforts may bring about will not be recognized. Moreover, lacking prior agreement on goals, he is likely to find that the one on which he has improved is "not very important." In stark contrast to the utterly permissive attitude toward conventional instruction, every possible unsupported criticism of an innovation is treated as sufficient to disregard it; so that, in effect, the superiority of an innovation must be sustained conclusively, rather than by the weight of the evidence.

Even while responding to a strong general sense of teaching inadequacy, college instructors, because they are amateurs, do not realize what is wrong. An important reason for this is a failure to observe with sufficient care either to detect present defects or to recognize improvements. Professionals are aware that the first signs of improvement are easily missed. Consequently, they will invariably arrange to count carefully the signals of altered behavior. Moreover, they will recognize that approximations must be counted in many cases, whereas faculty members will tend to overlook such indicators. When this failure to notice the first modest effects of innovation is coupled with a failure to recognize the many elements in the system which may interfere with success, there is a very considerable chance that amateurs will be disappointed by, and will abandon, a classroom innovation which has done as well as could be expected. Holding time-allowed-for-learning constant is an especially powerful contributor to such a result.

Testing. Of course, the principal means for assessing learning outcomes is the test. It turns out to be one of the subtlest and most versatile tools for self-delusion at the instructor's disposal. As the PI learned to ask, "What is being measured? Is it what should be learned?", he became aware of the following phenomena.

1. A very difficult and technical task was being performed in an off-hand manner.

2. There is a great deal of testing of what has not been taught.

3. A teacher elects to emphasize, by assignment and feedback, such a small subset of the possible performances related to a topic that examination of the textbook is almost no clue to the character of the course which will be given from it. Lacking other communication, several teachers will give several, quite different, courses.

4. A good deal of testing requires the recall of a word or phrase, which can only be the product of rote.

5. In accounting, the practice of giving part credit, coupled with many different occasions for combining essentially the same response (such as increasing or decreasing the Cash account) with some new learning, often results in counting a combination of well-learned responses as the main evidence of "success" on the new topic.

6. There is a tendency to treat all knowledge as interchangeable - i.e., to pay attention only to a total score, which may be obtained by very many different combinations of responses.

7. Common final examinations and other cross-teacher measurements that might be the basis of distinguishing differences in learning are usually collaborative efforts. Usually they are constructed when the instruction is complete or nearly so. Since they combine the contributions of several instructors, 2 through 6 above, all contribute to a stability in the range of total scores which one would expect from a random process. Thus, performances very different in detail are regarded as like. Limited innovation is often faulted for not making a large impact on a gross measure. A partial success is interpreted as a total failure.

Lacking the lode star of behavioral objectives, the laws of behavior gradually shape a teacher's examinations. The PI found that his own haphazard tests had undergone a culling process. In retrospect, it is easy to see that problems and examples which were infrequently answered correctly tended to be discarded. This is particularly true in topics having examples with a great range of difficulty. The topic of adjusting entries is one such example. On page 6 of the mid-term examination (Appendix D) we find the six possibilities which comprise the topic. Some are much more intuitive than others. When the writer first began to analyze his testing of this topic he found that eighty percent of the items tended to come from the easy half of the adjustment types and twenty percent from some of the more difficult ones. This certainly was not deliberate, but it was an obvious feature of the old tests. One good way of disguising learning deficiency is by an unrepresentative selection of test items. Another is the above-mentioned practice of awarding part credit for portions of wrong answers.

The instructor may also obtain more pleasant outcomes by accepting memory learning for concept learning. Two items from the departmental test for evaluating the program (Appendix A, p. 5) illustrate the difference dramatically. They were essentially alike, and for the benefit of the subject matter specialist are quoted below:

A. Fee received in advance from A. Smith for services to be performed over the next year and a half, $18,000.

B. Collected $7,200 for a three-year assignment as advisor to J. Smith. Will start the first of twelve quarterly consultations next week.

In each case a customer has paid the firm for service he has not yet received. The response required to A was the selection, from a list, of the letters identifying each of the two accounts which should be changed. One was placed in a column indicating that it was to be "debited," and the other in a different column because it was to be "credited." This task was performed equally well by both groups, and happened to be the item, out of six in this sub-test, which had the smallest percentage of error (11%). The reason for making a debit in this case is to increase one of the firm's assets. The purpose of the credit is to increase one of its liabilities, AND THESE ARE THE ONLY CORRECT BASES FOR MAKING THESE DECISIONS. The requirement for B was the placing of +7,200 in a column for asset changes and a +7,200 in a column for liability changes, the prerequisite decisions to choosing debit or credit in task A. (There were three other columns.) Error rates for B were larger because some students in each group had made a correct-looking response to A, despite a serious misconception. The error rate in the system group was 34% on the B task; in the conventional group it had risen to 70%! The task for A is much more typical of accounting tests, yet it resulted in calling equal the performance of two groups in which one had twice the proportion of errors. Perhaps more important than the measurement error is the fact that every time the response to A is incorrectly accepted as evidence of understanding we tend to teach the misunderstanding.

Even if clearer evidence is collected, there are means of making things look brighter. Decisions have to be made about where to assign weights to the performance. The subtest (p. 33) which was analyzed for "impossible answers" was graded in two ways. One way was to assign equal weight to each of the cells in which a plus, minus, or zero appears. When this is done, the possibility exists for a score of 66 2/3% when all answers given are "impossible!"

No skullduggery need be involved, we emphasize. The greater comfort of an unbruised ego and student equanimity must be offset if tests and scoring which produce smiles are not to seem somehow better than those which produce frowns. Clearly, if deliberate rigging were involved, no occasion need arise for scaling the grades. Yet, of course, the practice of assuming that most of the scores earned are sufficiently satisfactory is not rare.

As practiced by the average faculty member, testing is superstitious behavior. Although errors tell more about student capacities, a total derived from the correct responses is all that is typically attended to. The items included are often a hodgepodge unwittingly selected for producing higher scores, rather than for their appropriateness for correctly assessing instructional effectiveness. Scoring systems may be used to disguise inadequate performance. And, finally, norm-referenced grading may be used to interpret clear evidence of non-learning as a range of successes. Moreover, the PI had found strong resistance to improving on customary testing. While, initially, analysis forms were accepted for what they were intended to be, a job aid, as system students consistently displayed substantial advantage on these tests there has been increasing criticism of "unacceptable" formats. The supplement entitled, "The Accounting Model," is an attempted response to this criticism, and was used by conventional students in this study during the taking of progress checks. In the Accounting Department, such measurement deficiencies of customary instruments as were related earlier do not disqualify customary formats, but the time needed to explain new formats is regarded as a sufficient excuse to reject an improvement. Amateurs are unaware of the effect on learning.

The insistence of the University system on ineffective measurement is a substantial barrier to validating innovation. To the extent that student responses depend on precise ways of asking for these responses we can be sure that the responses are not based on well-learned concepts. As experienced by the PI, the faculty insists that this distinction not be made.

Administrative Neglect and Why. It is clear that groups of instructors are almost certain not to design and maintain collective standards until motivated to do so administratively. At present, administrators at all levels are contributing to the opposite effect. They would be so contributing if they were only to ignore the matter, and they do. However, as Appendix A describes, rewards are presently administered so as to discourage the collection and submission of data on learning outcomes. Of course this behavior is equally shaped by circumstances, and we no more attribute malice to this group than to instructors. From his limited vantage point, the PI can identify the following.

As with instructors, they know not what they do, for indeed, nearly all were instructors before becoming administrators. The second important factor is "collegial authority" and associated practices. It is not true that administrative options are circumscribed by regulations. Rather, the administration is inhibited by the faculty's power to second guess. (In Appendix A there are several examples, notably the recommendation process of the department Curriculum Committee.) As a consequence, reform must originate with those to be reformed and must be advocated by a majority in order to be implemented. Not surprisingly, there is a built-in assumption that university instruction should continue. No matter how fully he may concur in Simon's "nearly totally ineffective" appraisal, the writer has yet to encounter a faculty member who includes "terminate the activity" among the possible decisions.

Recognizing "collegial authority" as a problem is not intended to imply that faculty should not make curriculum decisions. However, it would be better for administrators to set objectives than to have none - or only private ones. Administrators should insist on operational goal-setting and should oversee implementation of these standards, especially within multiple-section courses. The data do indicate that little would be lost if a course were not given. Administrators should make some minimal number of behavioral objectives a prerequisite to having a class begin.

Budget considerations also influence standards. At the University of Massachusetts, many allocations of funds are made on a per student basis. Moreover, recently-established and growing graduate programs have been paid for out of funds allocated on the basis of undergraduate enrollments. For schools which, like Business Administration, have catered to the less academically talented, an attempt to up-grade performance without individualizing time-allowed would involve a period of financial hardship while the new reputation was created. To undertake and sustain such a move, teachers primarily concerned with graduate courses would have to concur. So long as student contact hours are treated as though they were output measures, there is little incentive to undertake more, rather than less, burdensome or risky activities during the contact. (Although the University is moving toward budgeting for programs, there is presently no sign of defining these programs in terms of learning outcomes.)

A very important factor at all administrative levels is the rigidity imposed by funding to maintain a fixed student-teacher ratio. Simply put, what this means is that there is one instructional resource which can be depended on to fluctuate with the number of students to be taught. No such dependable relationship exists between enrollments and other types of resources. Yet, fostering learning more efficiently would use teachers less, and inputs such as aides, machines, and self-instructional materials more. Even to secure the greater efficiency which cooperative teaching efforts among faculty could achieve, the resources to facilitate coordination are needed. Not only may they be difficult to acquire in a given instance, there is also a risk (not present when reliance is on teachers only) that not all the interdependent constellation of resources necessary to greater efficiency will continue to be available. Deans would not dependably benefit - that is, be able to use the resources saved according to their own priorities - but, worse, they assume a greater risk of losing essential resources in the future. If a legislature would make funds available according to the customary teacher-student ratio, but allow instruction to be supported in various ways, a severe constraint would be removed.

What is distressing is that, so far as can be observed, the administration is working to retain the fixed teacher-student ratio and not working for the flexibility it needs. This may well reflect an assessment of what is feasible, but it surely does not reflect a recognition that there is almost nothing to be lost by risking conventional instruction. Students did recognize it (Appendix A, p. 14).

There are similarly counterproductive constraints in an academic calendar. Individualizing time-to-complete would call for keeping open some dormitories during periods between present sessions. It would appear that the University administration has some of the necessary flexibility here. It is apparently able to decide whether or not to offer summer school without affecting the budget. It could obviously make additional dormitory charges according to individual needs. At present, the instructor who would voluntarily extend the learning time finds the University housing operating on contradictory assumptions. Conversely, facilitating response by the housing subsystem awaits some substantial and dependable planning for extended instruction.

Is the Problem General? It must now be apparent that the PI perceives difficult, serious and complex problems. It may well be asked whether he has over-generalized his experience. In answer, it can be observed that the motivating tendencies of legislative and administrative constraints apply throughout the University. It certainly would be possible for an individual dean to bargain for some longer-term guarantees of support which would reduce the risk of devising new patterns of instruction. The contention is only that he has little incentive to do so, and that it happens rarely, if ever. (Allowing one or two inadequately supported faculty members to try a new course, at their own risk, does not qualify.) On the other hand, the consequences of rigid time-allowed-to-complete are universal. Likewise, wherever the dependence on listening efficiency has not been reduced, that characteristic of learners, an average 25% efficiency, is overwhelmingly influential.

There is a general observation which can be made. For many years it has been possible for a student to qualify for the equivalent of a year's instruction by passing ten examinations. A $5.00 fee for each one would make the out-of-pocket cost of a year of college $50.00. It is clearly pathological that this option has virtually never been utilized. Whatever is wrong, the observation applies across the University. The PI perceives two main factors. First, there is the absence of information about what will be required. Although it should not be necessary, students can improve their predictions of what will be expected of them through class attendance. Judged by the use of credit-by-examination, no segment of the University appears to have taken the first necessary step of defining objectives. Another possible influence, though necessarily a conjecture, is the unlikelihood of norm-referenced grading of a comprehensive course examination. No norms exist. On the evidence of the Accounting Department reaction to its students' performance deficiencies (Appendix A, p. 7), it would appear that faculties usually think of their students as achieving much more than they do. If this is so, the test appraised in isolation (with this fantasy as a criterion) will clearly be judged more severely. In other words, the apparent financial bargain of self-study and credit-by-examination may be giving way to a performance bargain in the classroom. In assessing this interpretation, note (Appendix A, p. 14) that students who were successful in using a text book to prepare for progress checks in elementary accounting rarely made use of a classroom option that was available. Elementary accounting is one of the courses eligible for credit-by-examination. As we have already related, far more than half of students in one semester's classes showed that they had not learned the most fundamental concepts.

It appears reasonable to believe that exceptions to the kind of dismal results which the PI knows firsthand, and escape from their pervasive causes, are isolated and rare. In summary, the causes are seen to be the failure of administration to manage teacher behavior, the budgetary and other factors which discourage them from doing so, the amateurism which leads both not to recognize the need. Three aspects of amateurism received special emphasis. They were the practices which deny, but can't possibly overcome, the facts of individual differences in need for time and of average listening efficiency and the crucial lack of both competence and humility in devising and using tests.

CONCLUSIONS - Self-Instructional Materials

The conclusions to be drawn from the experience being reported are of two types. Those which pertain to the immediate project are simple. They must be qualified because of numerous defects in research design over which the PI had no control. Nevertheless, several conclusions are clearly warranted.

An incidental objective of the project was to validate, formally, the effectiveness of a system employing a number of programmed lessons. These pre-project lessons, when employed under the system, are a means by which students of varying aptitudes can attain the objectives embodied in the post-tests. As compared with the specific example of conventional instruction used as a control, the differences are large for every topic. While part of these differences must be attributed to significantly greater quantitative and verbal aptitudes, substantial advantage remains when students of comparable aptitudes are compared. There is also rather strong evidence that many of the performances taught by these lessons are enabling objectives for the learnings of the topics which were programmed in this project, Reconciling the Bank Statement being a probable exception.

With respect to the lessons developed for the project, the most important instructional objective was the achievement of a mastery-level score in no more than three attempts. It was demonstrated that the lessons will facilitate this attainment for students with appropriate entering behaviors. The system had established these behaviors among those students who participated in the comparative testing.

The objective of obtaining mastery-level performance from at least ninety percent of the students in the conventionally-prepared sections was not achieved. There was interference with the operation of the system which leaves open the question of whether this objective might have been achieved with any lesson. There is rather strong evidence that many students of the conventional pair were too ill-prepared to achieve the objectives of the Bad Debts lesson without substantial remedial instruction, but since, for the project topics, the system feature of repeating progress checks until mastery applied to all students, it would seem that the Bad Debts lesson was the more effective subject matter presentation. There was significantly better final examination performance by students who had these lessons. However, it should be understood that this was evidence of a closer approach to a satisfactory performance rather than of achieving that performance. Since the system students were able to achieve mastery in three or fewer trials, it seems reasonable to emphasize deficient entering behavior as an explanation.

Very little can be said about the modular effectiveness of the Cost of Borrowed Money lesson. The advantage for the all-conventional group on the first attempt on this lesson was reversed in the final exam scores, but the difference was insignificant and the performance very deficient. The project lessons of Petty Cash and Bank Reconciliation clearly helped more students to success on their first attempt. However, this advantage had disappeared by the time of the final examination. All methods of instruction were satisfactory for the Bank Reconciliation topic. It is one which the project proposal predicted would not depend significantly on entering behaviors likely to be found lacking.

It seems fair to attach most importance to the removal of the requirement for passing as explanation for the difference between the all-system students and those of the conventional pair on the Petty Cash lesson. The events with which the lesson is concerned are mostly simple and well-practiced. However, the concept deficiencies would appear to have more impact than in the case of Bank Reconciliation.

The PI can report requiring mastery, with many of the progress quiz items, on three of the project topics in two semesters before the lessons were developed. The textbook had proved a feasible vehicle for his students to meet the objectives for Cost of Borrowed Money, Petty Cash, and Bank Reconciliation. The significance of this would seem to be that if few students of the conventional pair of sections could ultimately have met the criterion of mastery, then the explanation lies in their deficient prior preparation. Of course, the cancellation of the requirement that they satisfy a progress check leaves this issue indeterminate. It does seem certain that the system is as important as the self-instructional material, if not more so. If the instruction is not to be individualized, only the lessons on Petty Cash and Bank Reconciliation suggest any possible advantage. Of course, conventional instruction was not advantageous in any respect. If the topics are not to be learned, not assigning them is superior to all treatments used!

In summary, one can recommend a lesson for students with suitable entering behaviors. Very careful attention must be given to whether or not these prerequisites exist. One way to accomplish this is to use the system with the self-instructional materials which were developed prior to the project. A teacher who is preparing his students by another means probably should devise some assignments which afford practice with a variety of the forms in the supplement entitled, "The Accounting Model" (Appendix D). It would also seem that if the results achieved by the conventional instruction are considered to be all that is feasible, then it would be better to provide self-instruction to selected individuals and to remove the topics from the required content of the course.

Conclusions and Recommendations - University System

Something should be done. At least most of the University of Massachusetts, and clearly the School of Business Administration, is in the business of taking money for something it does not do and of pretending to its clients that they have learned when they have not. Such practices, no matter how sincerely undertaken, are not usually permitted. Majority votes of those engaged in the practice are not justifications.

Of course, this report does not contain all of the evidence necessary to sustain the foregoing conclusion. The incidents and data are examples, more of which exist. More importantly, behavioral analysis of the forces at work in universities should lead one to expect outcomes similar to those cited generally, although it is not contended that the results are inevitable. It is certainly not contended that no college student learns his subject matter well. Self-study is obviously sufficient for some. While this small group needs to have its learning validated, the elaborate and expensive enterprise of a University is certainly not justified by this service alone - nor is this its claimed accomplishment. However, there is no evidence that conventional instruction contributes anything to learning. "Impossible answers" usually contradicted the barest understanding of accounting fundamentals (p. 34). The small number who may have understood could easily be limited to those who needed no help. Indeed, about the same fraction of students did use a textbook and avoid classes in successfully learning some of this subject matter (Appendix A, p. 14).

Whether the particular details of the system analysis are correct or not, there is ample data to show that most students did not learn what teachers were trying to teach. It may be that this latter group of students experienced an advantage in the market place for services, but education is somewhat more than a laying on of hands. Or if it is not more, then certainly this function can be performed far less expensively. A Massachusetts citizen will surely conclude that if improvement is not possible, the School of Business Administration, and like segments of the University of Massachusetts, should be replaced by the less expensive substitute which could be equally effective. A reasonable alternative will not be easy to achieve. However, it would be very worthwhile, and we have a choice.

The analysis which we have presented cannot promise that learning will improve if the barriers identified are removed. What is assured is that some, indeed most, of them will prevent improved learning so long as they persist. If instruction is to become effective, a coordinated effort, sponsored at the highest level, will be necessary. The strongest representations must be made to the legislature that there are often far better ways to spend the amount of a professor's salary than to pay it to a teacher. Within the University, accountability for learning outcomes will have to be established, and this will require a considerably more elaborate apparatus for making an internal audit of effectiveness.

Immediate steps should be taken, but considerable time would be required to complete the necessary institutional changes. It would be a mistake to attempt to plan a complete alteration to be implemented all at once. It would be equally a mistake to continue present practice, unmodified, even for one more semester. It would be sensible to use a semester or year to replan for effective instruction. If during this period the only teaching function provided is the validation of credit-by-examination, no material reduction in results need have occurred. It is recognized that there are other University functions. Under more appropriate arrangements a smaller number of professors may specialize, or largely concentrate, in research; this could be arranged rather promptly. The relationship of this group to instruction would probably be that of authenticating the objectives ultimately determined.

Of course one cannot provide the new plan. Whatever is first implemented would be incomplete and should be tentative. An empirical approach is the essence of becoming effective. The achievement of any modest, but clearly specified, outcome will be an improvement. It is not, however, clear that this choice may be left to faculty. (See Appendix A, p. 31.)

Essential or Desirable. Some desirable, if not necessary, characteristics of an altered instructional environment can be enumerated. The single most important change will be to introduce time flexibility. An absolute essential for this is the definition of a course in terms of what is to be accomplished. It will certainly be necessary to employ professionals to coach faculty in operationalizing their goals, and it is essential that professionals decide when the specification is "behavioral." Evaluation of teaching will need to foster the shift. Ultimately the assessment will be of a system in terms of its intended effects. The purpose will be to decide what individuals should do differently, not to decide on whether each did well. In the short run, before it has been decided whether all of the appropriate objectives have been identified and before validated instruments for assessing achievement of objectives exist, teaching may be assessed on whether or not behavioral outcomes have been specified and on the progress toward what is ultimately needed. One may also look for shifts toward cooperative participation in an instructional system as opposed to the independent conduct of a class.

Although it would be inefficient to use professors for many of the functions which the system will need to have performed, the appropriate kind of altered arrangement will take time. In the meantime, faculty can, and should be expected to, cooperatively reorganize for responding to the individual learning needs of students. One characteristic of this cooperation should be the separation of the contradictory roles which teachers now fill. The person who ultimately judges whether objectives have been achieved should be someone other than the person who is coaching and otherwise facilitating the student's achievement of these objectives. A person or persons performing the evaluative function will thus be better able to provide non-adaptive responses to student performance. The student need not be inhibited in letting the teacher know when he does not understand by the possibility that this will reflect negatively on his assessment. Both the student and his coach need candid feedback about the student's progress.

The PI wishes to emphasize that he is not recommending high failure rates. It is assumed that when a minimum accomplishment is specified it will be more realistic. Moreover, the emphasis is on allowing sufficient time for standards to be met. There is no wish to ignore affect in appraising the quality of instruction, but it should be the affect of instruction which effectively reaches cognitive goals. It is also not our recommendation that no outcomes other than those which have been behaviorally specified should be sought - only that such alternative outcomes not be considered to compensate for the non-achievement of specified requirements. There need be no less student or faculty choice in setting learning goals; but advance, and clear, specifications should be required.

Cost. It is not clear how the drastic alterations recommended would affect the total University budget. There are vast resources which can be redirected. There are also vast deficiencies with respect to even modest goals. As disadvantaged groups are increasingly admitted to the University, more professional, lengthy and expensive instruction is needed. (At present, great injustice is done to these students. Existing programs do a great deal of emotional damage on top of misrepresenting what can be accomplished.) There is an obvious untapped resource. It is wrong, for the sake of students, to ignore the role a student can play in helping others learn. Usually the tutor benefits most from so doing. However, assessment of the results should be in other hands. Substantial development is needed before the institution can capitalize, appropriately, on this resource. There should be budgetary incentives to encourage deans to sponsor these and other modifications of instruction. There should be strict accountability for learning in assessing modifications. Other consequences will have other outcomes.

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APPENDIX A

Trying to Improve Learning

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APPENDIX A

Trying To Improve Learning

Purpose: In looking for explanations of behavior, instructional technologists like to ask, "What happens when the learner behaves as he does?" They know that the behavior is the result of reinforcing consequences. Especially if the technologist is interested in fostering other behavior, he will also ask, "What happens (would happen) if the learner behaves in a (specific) different way?" An important reason to ask the latter question is that existing behavior may produce the lesser of evils, an escape from more-punishing alternatives. (It is important to understand that the human organism is very often more punished by lack of attention - no apparent consequence - than by scolding or criticism.) This appendix, then, is intended as one answer to the question, "What happens when a faculty-member tries, through scientific (empirical) means, to increase the amount of learning in his classes?" It also includes details which are deemed pertinent to the question, "Why?" It is a case study in the first person. A version was attempted in the role of principal investigator, but the result seemed misleading. It is a person who behaves; it is a person for whom there are consequences.

My experiment re-designed. The semester (Fall, 1970) was barely underway when I noted that the department Curriculum Committee had been asked to consider whether sections of the elementary accounting course should be given a special label when I was the teacher. I treated it, initially, as a mere annoyance. There existed an approved project proposal which assumed that assignment to these sections would be essentially random - since computer scheduling was employed throughout The University of Massachusetts. It if were not a teacher's privilege to choose whether or not this would happen, it seemed the very slightest of concessions to research to continue the practice of decades for a few more semesters. The events of the next two weeks were nearly unbelievable.

The Acting Chairman of the department declined to remove the item from the agenda. The chairman of the Curriculum Committee was informed of my wish to attend the committee meeting. (It was customary for all committee meetings to be open.) I was told that I would be notified along with others. Later, I found the Committee in meeting without me. I was told that the matter of special identification of my sections might not be considered because of a long agenda. I replied that I simply wanted to be sure to be heard before a recommendation was made. One half-hour later, I was asked to attend. I left when the meeting broke up. My impression was of a surprising and flattering interest in the details of my research design. I recall no questions about how I would be conducting my sections, even though one member of the Committee was not yet a month on this campus. Another member had resisted, but plausibly, my efforts to interest her in trying out a hypothesis in classes which I did not teach; the third I considered a friend of long standing. No committee member had ever indicated any sort of reaction to, or real knowledge of, my instructional practices. I assumed I was giving them information about an existing authorization which they would neither want nor, for the period of the project, be able to alter; and I assumed that the termination of the meeting meant the subject was being dropped. It was even remarked that even if a recommendation were made the earliest a special label could be applied to my sections was the following September. Naturally, I was completely unprepared when, on the day of the meeting, the committee's memorandum included the following:

> "Distinction Between Program and Lecture Courses in Accounting 125.
>
> The Committee decided that the two approaches in Accounting 125 are different enough to warrant different numbers for them. It therefore recommends that the necessary steps be taken this academic year to assign different numbers to these courses no later than September, 1972.
>
> Because the renumbering may take until September, 1972, the Committee considered the possibility of distinguishing between the two approaches in the course schedule booklets. It considered carefully Frank Singer's description of his experiment next fall with four special programs. It concluded that differentiating between the two kinds of courses in the course schedule booklet should result in a sample which is no less comparable than the sample obtained under present procedures. It therefore recommends that the differentiation between the program and lecture approach to 125 be started now.
>
> MOVED: That the Schedule of Courses differentiate between the program and lecture sections of Accounting 125 starting with the spring semester, 1971. It is further moved that the Registrar's Office be asked to change the computer program so that students can sign up for the program sections."

The department voted the motion by a 2 to 1 margin. The only person who had ever asked me about an adverse student reaction voted with me against the motion. When one new faculty member complained about making a decision on a complex and unfamiliar issue the justification was given that the preparation of schedule booklets allowed no delay. My question about what was done in my sections to make them "different enough to warrant different numbers" was not answered. Attitudes which had never been expressed to me and allegations later proved false were aired. Of course, having secured the many authorizations required for permission to submit the project, I fully expected the action to be overruled. Before describing what happened instead, it is necessary to provide some background.

Some background. First, I readily acknowledge that I can not possibly present a completely unbiased picture. Strenuous efforts have, however, been made to secure an on-the-record explanation of the position and action of other parties involved. In over twenty months I have not succeeded. Therefore, I can only offer a view in which my interpretation is buttressed by as much fact as I have available.

Ironically, student acceptance was high (Singer, 4) so long as I had little understanding of what I was doing. Following my attendance at the Center for Programmed Learning for Business, however, I both undertook a substantial revision of the program I had developed to date and modified the conduct of my classes to provide individualization.[1]

The establishment of my system coincided with the administrative abandonment of two practices. One was that a business school student who started any required course, such as Introductory Accounting, would not ordinarily be allowed to withdraw. The second was that students were required (with exception, rare) to remain in the section to which the computer scheduling assigned them. There was no general announcement of these modifications and students were slow to discover the altered contingencies.

I did not then recognize the full magnitude of individual differences. Naively, I kept expecting the improvements in my lessons to make the system the easiest and most attractive way to learn accounting. It was evident that those students who finished my course were learning a great deal more than my former methods achieved. The major share of the attrition occurred when the programmed lessons ran out and those who had progressed more slowly were unable to keep up with the group-paced instruction. Attrition rate, in the sense of that fraction of students who did not achieve the enabling objectives for a subsequent lesson, had actually fallen. That this lack was early made clear seemed an improvement.

Resources were plentiful, and few other members of the department made use of them. The administration was supportive at all levels. Three times internal grants were awarded to support my efforts to improve instruction.

There were critics among the faculty, but I heard of the criticisms only indirectly, through the new Department Chairman. Uninformed criticism seemed irrelevant, but there also seemed no way to initiate a rebuttal. Even if true, the chairman's periodic assertions that my program would never be adopted by the department seemed no reason to abandon it. He cooperated quite readily with each new trial. In one semester, to his everlasting credit, he used the program in a speeded-up introduction designed for graduate students. His explanation for not continuing to use it was that the program did not save time, as he had hoped. Of the system he said, "I have no objection to what you are doing."

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[1] Only recently have I encountered a description of "The Keller Plan." I recognize a very close parallel. In particular, my experience agrees with the comment "several investigators report relatively high drop-out rates from Keller-based courses, and the most frequent comment from students who withdraw is that these courses are 'too much work.'" (6)

Instructional Evaluation - A test. During the same term a departmental committee was appointed to make a recommendation on the future use of "the program." I had no contact with this committee until, very shortly before the second semester, I was informed that they planned to test all students over the topics for which there were programmed lessons on the first day of the second semester. Certain data and opinion were also to be collected. I cooperated at some inconvenience, although I objected to the committee's plan simply to report the data, rather than to recommend what should be done. After all, informal comparisons which I had done would still be relevant. In these (Singer,5) system students were almost entirely above the 50th percentile of the conventional groups to which they were compared. Action should consider all the evidence.

I was asked to review the test, but the test administered contained few of the modifications which I had understood would be made. Since I was very much in favor of establishing performance data as the criterion of good teaching, I only pointed out to the Department Chairman how the test might fail to show an advantage for the system which, in fact, existed - and that the test was not what I had agreed to. When the committee reported to the department, I found that they had not collected data on individual items, as I had recommended. Means were reported for a total score and four sub-scores. The entire set of student comments was listed verbatim. This information was distributed during a meeting. No recommendation was made.

Instructional Evaluation - Results. While the mean total score was about 5% higher for those using the system I was very disappointed because I could see that performance levels of system students were very far from what they once had achieved. No member of the faculty ever volunteered an opinion of the results to me. Following the meeting, I asked the Department Chairman what he thought of the result. He replied that the tests had turned out "about like you said they would."

When time permitted, I secured a 25% sample of papers from each group. My only purpose was to identify the deficiencies. As analysis proceeded, it became clear that a picture of the comparative results much more favorable to the system might have been given. The mean for the system group was strongly influenced by the grading decisions of the three novice teachers who worked with me. A majority of the very lowest scores were from their classes and tended to indicate that a passing grade was inappropriate. At any point above the 15th percentile of the combined distribution, the proportion of system students who had exceeded any given score was greater than the proportion of conventional students who had earned it. For example, 55% of system students scored above the combined median while 40% of conventional students did. Differences were similar at other points. When I secured the data deck for all students, I found this observation to apply to the universe. The chairman of the testing committee received this sort of information cordially, but did nothing to update the information supplied to the department.

There was a much more profound significance in this data.[2] Even without the detail to which it was attached, the facts summarized in the following memorandum, which I later sent to the department faculty, are eloquent.

> Before adopting an outline for Accounting 125, I would like to see us consider the attached results conscientiously--and make a clearer, better plan.
>
> The numbers I have inserted come from a carefully-drawn 25% sample of the tests given on the first day of Accounting 126 last Spring. They are number of incorrect responses (N=61).
>
> Considering the items, I believe that results, or standards at least, need to be better. In fairness to teachers of 126, if for no other reason.
>
> Some summary reasons for this opinion, in terms of this data, are:
>
> Of 27 items tabulated,
>
> 14 (more than half) have CLASS success ratios of 60% or less,
>
> 10 were missed by more than half the students.
>
> 2 (out of 9 cases where this is easily determined) were missed more often than blind chance would predict.

It should be noted that the sample referred to is a combination of the system and conventional performances. The motive was to cause a problem to be recognized. A less favorable, but more threatening, picture could have been derived from the conventional performance alone.

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[2] See also, pp. 32-3 of this report.

At the meeting before which the above memo was distributed, a discussion of standards for the introductory semester was placed on the agenda for the next meeting. At the conclusion of the meeting the Department Chairman expressed concern and asked what we could do. I replied that even the expectation that a similar test would be given in sections of the second accounting course each semester would tend to make teachers of the first course more conscious of deficiencies which might be revealed. He replied that he would be down to talk to me very soon about this possibility. Since that meeting I have inquired an opinion of these results from nearly every department member. Almost all denied familiarity with the data. When I recalled some of the facts, not one defended them as reasonable or adequate. Nevertheless, after two years the Chairman has not paid his visit nor has the department held the scheduled discussion. In my opinion, these facts are simply too painful for faculty to acknowledge them. Elsewhere,[3] I have described some of the mechanisms which tend to disguise these realities. I can describe them confidently because my own tests and other instructional materials contained the same deficiencies until I began to think in terms of criterion performances.

Due Process. The relevance of this test to the department meeting reported earlier is that the chairman of the testing committee volunteered several hostile opinions and some false statements which were naturally very influential. He said:

1. that the scores were "not very different,"
2. that the student comments were "horrible", and
3. that he and a departed committee member had deliberately biased the test in favor of the system students because they thought I would not accept it otherwise.

If his last assertion were true it would mean that there were no circumstances under which the test result could be favorable to the system - had there been poor performance the system would obviously have failed and even a very large advantage in score would be dismissed on the grounds of bias. However, I have secured a written contradiction of #3 from the person supposed to have participated. Since I knew of strong evidence of an opposite bias, I asked the testing committee chairman, in meeting and subsequently in his office, for an explanation of how he believed the bias was introduced. He promised me (more than once) a written explanation of what was done, but has never provided it.

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[3] pp.37-42

In commenting on my memorandum he declared that my use of a random start in sampling (rather than random numbers) entitled him to dismiss my information (rather than to reply with his own random sample or to test my sample data for randomness). Yet, analyzing the test results was his responsibility - my knowledge of the data is due to work that I have done which he should have. My report of (consistent) results based on the universe of data has not changed this criticism, yet the memorandum only concludes that the sample reveals performances that I would call unsatisfactory. THE SAMPLE MEDIAN IS 31. THE MEDIAN OF THE UNIVERSE IS 29. THE SAMPLE MEAN IS 31.1. THE UNIVERSE MEAN IS 28.8. THE SAMPLE CANNOT UNDERSTATE THE DEFECTS!

This meeting, as it developed, was merely the first in a series of unprofessional denials of due process. The same person was a member of the department Personnel Committee. He was also the department's representative to the Personnel Committee of the School. I am at a loss to account for his behavior, unless the influence of the Acting Department Chairman (from whom I feared opposition) on the pending tenure decision for this faculty member resulted in an implicit collusion. The man is a former student for whom I have written many recommendations. He not only had shown interest in behavioral objectives, but had prepared some for one of his classes and attested to their benefits. We had discussed writing a joint article on the subject for a professional journal. Moreover, he wrote to the department, following my memo on standards, a description of how we might cooperatively individualize the course in question. I was delighted with it and told him so.

Instructional Evaluation - Affect. Were the student comments "horrible?" I have no doubt that he tended to hear very negative ones in direct student communication. However, puzzled by my inability to see the great difference between the comments of system students and those from conventional sections I asked a colleague, a specialist in education measurement to secure some independent assessment. His memorandum reports that the comments could not be reliably categorized and continues as follows:

> "Both groups contained both positive and negative commentary in regard to student perception of the instruction, and the consistency of the commentary is very difficult to identify due to the difficulty in setting up reliable categories. Surface analysis of the two groups might indicate that the students as such did not enjoy the programmed instruction format as much, but that they felt the extra insight gained from this format was worth the effort. Comments on the lecture group tended to indicate that the students were somewhat happy with the experience but also felt guilty that they did not put in enough time. Comments like "It's so nice to see

> Mr. X doing well; I didn't know he had it in him," and "Mr. X was a madman with his red pencil" tend to discount the credibility of the comments.
>
> I would feel that there is no discernible systematic difference between the two sets of comments."

Risk - Whose is it? Although I was unprepared for the way in which it was done, I had been warned that there were risks in trying to improve learning. The Assistant Provost first suggested to me that I seek research support. When I remarked that his enthusiasm for my results did not seem to be matched among my immediate colleagues, his immediate reply was, "You are a threat, Frank." He cautioned me to make sure of my Dean's support before I undertook the write-up. When I made a similar observation to the Dean, he remarked, "They (the department critics) don't understand what you are trying to do." The project instigator, although on campus, is no longer connected with the Provost's office. His support, though consistent, has turned out to have little influence with his successors. A conclusion to be drawn from my experience, I think, is that the empirical improvement of instruction tends to require a period long enough so that evaluation falls to someone other than the person who approved the planning and this tends to mean that all the risks are assumed by the innovator. Moreover, the same person may not have a reliably consistent attitude.

The Department Chairman read my proposal and recommended to the Dean that it be submitted. Because of my unsatisfactory experience in trying to run a controlled experiment - one which would have been automatic before the administrative changes which coincided with my system implementation, I was careful to ask, "Can we do what I propose?" The answer had been, "Yes, I think so."

Not only did the Dean read my proposal carefully enough to suggest rephrasing, it was also necessary for him to secure special permission from the Provost's office for payment of a part of my salary which would not be fully reimbursed by the grant. I felt sure I was doing what others wanted done. That these others did not include some teachers in my department seemed natural and not serious. The environment has changed, and in today's environment I would know better, but I expected that plans made under former assumptions would be implemented and evaluated under the same assumptions. This has not been the case. (In mitigation of the behavior to be described, it should be acknowledged that the student strike had closed the prior semester.)

Grants, yes: research, no. The Dean would not overrule the department's vote. When I referred to a committment he opined that this was too strong a word, despite his signature and mine. He did, however, agree to request a reconsideration by the department because "you haven't had a chance to plead with them...."

About two weeks later, while the department was meeting, the chairman of the Curriculum Committee conducted a telephone negotiation with the project director. Here is her entire report to the Acting Department Chairman.

> "Upon your recommendation, the Committee agreed that I should call up (project director) of the U.S. Office of Education in Boston and discuss with him the effect of the department's decision on Frank Singer's grant. I discussed this subject at length with (project director) on October 27.
>
> (project director) and I agreed that Frank's project consisted of three parts:
>
> 1. The design of 4 new programs to teach bank reconciliation, petty cash, discounted notes, and bad debts.
> 2. A comparison of the effects of the 4 new programs versus the effects of previous teaching methods, i.e., a comparison between the students in Frank's two sections and a comparison between the students in two lecture sections; and
> 3. A comparison between the program and lecture sections, with and without the 4 new programs.
>
> I pointed out to the project director that our decision to differentiate would have no effect whatsoever on the first two parts of the project above and (project director) stated that his interest in primarily in the first or developmental part.
>
> As for the comparison between lecture and program sections (Part 3, above) (project director) was under the impression that, due to the computerization of the assignment of students, each section would contain a random sample of the total population of students in the first semester of accounting. I had to point out to him that this is not necessarily true due to three circumstances:

1. The absolute right of students to drop courses within the first ten days of the semester as long as they still carry a full load of classes;

2. The fact that students can add, drop, and change sections on registration day; and

3. The fact that it is departmental and school policy to let students change into and out of program sections in Acctg. 120.

I told him that the committee agreed that, due to these three circumstances, the samples are not random any more but that a bias has been introduced. On this basis the Committee (and later the Department) decided that the bias introduced through differentiation of the sections was probably no worse than the bias existing under the present arrangements.

The project director and I discussed the possibility of eliminating the three circumstances mentioned above. I had to tell him that we could do nothing about the student's right to drop courses. As for the other two, I had to point out to him that it would be unfair to prevent students from changing out of or into Frank's sections and yet let other students change. I also mentioned that I did not think the Department or the School would agree to that. But even if we did agree to keep students in these sections, there are ways and means the students have discovered to get around that, as I mentioned to (project director).

In conclusion, (project director) stated that our decision to differentiate and to let students decide whether they wanted to be in the program sections or not would not result in Frank's losing the grant. I then offered that we would go ahead with our decision and that we would review the situation next spring. If we find then that the project is endangered as it would be, for instance, if very few students sign up for Frank's section, we could reconsider the decision and decide not to differentiate but go back to the present system for the Fall semester of 1971 only."

Notice especially the final paragraph. While, technically, not promising to suspend the differentiation of my sections it was the project director's clear impression that this would happen, in the event of small enrollment. In the meeting at which the committee recommended continuation of the labelling, but with the indicated possibility of reconsideration, I attempted to get specific criteria for removal of the label established. While I could not do this, the example of low enrollment was explicitly mentioned as a reason to reconsider.

Since I had, in fact, had no opportunity to plead with the committee, even though one or two students had been added since our initial encounter, attention should be called to:

(1) the inaccuracy of the part 2 characterization of the project;

(2) the absurdity of the observation that the instructional design would be unaffected by a lack of access to a representative group of learners;

(3) the assertion of the impossibility of making a rule (about the assignment of students to sections) which had been standard practice for many years in the near past;

(4) the arrogant assumption that the committee could judge a degree of bias in hypothetical events. (Of course I had made the point that, at the very least, it was desirable to have the computer establish sections and to measure some characteristics of those who did not remain in the sections.

(5) the greater concern for the possible loss of money than for the quality of the effort that the money would support. (I found this to be a distressing distinction applicable to all interested parties other than myself.)

Instructional Options. I knew, better than anyone else, that enrollment would be a problem. However, any reader who might agree with those who characterize the action as merely giving students "freedom of choice" is referred to the work on deviants reported in Psychology Today. When Anthony Doob and an associate reported (arbitrarily) to randomly-selected individuals that they had made extreme scores on a series of personality tests they were able to demonstrate very many of the manifestations of prejudice, including avoidance, among associates to whom they had reported normal scores. (Doob, 2) The special labelling of my sections amounted to a prominent advertising of deviance from which recovery was probably impossible.

Some additional history is necessary to understand the full impact of the department's action.

As a result of preparing the project proposal, I had come very fully to recognize that, in Herbert Simon's words, "... one can point to generalizations of *proved validity* that demonstrate the futility of much current practice." (Simon, 3, emphasis added.)[4] I had tried futilely, on many occasions, to generate a meaningful discussion of objectives; I had found the Department Chairman receptive to reason when he heard it; and I took approval of the project plus agreement to a plan (shortly to be described) as indicating his acceptance of what I knew. (It should be recalled that this project was planned to *enable* a demonstration of limited individualization - an indication of what the future might hold.) What was very, very clear was that the continuation of "current practice" was unjustified - even if the alternative was to close up shop (see Conclusions and Recommendations, p. 47). I therefore decided to carry out a plan which should force consideration of reform.

The paramount conclusion to be drawn from the testing described earlier was that *there is no discernible requirement for the passing of the first accounting course*. Once this fact was recognized, it was easy to understand why some students emphatically preferred the conventional instruction. Requirement of a number of criterion performances before credit for the course was granted amounted to a contingency contract. There are two essentials for using this powerful educational technique (Freider, 3). The first is that the learner desire the reward offered. This condition is met under the system if the credits are earned. (Grades are usually high.) The second condition is that the reward be *not obtainable outside the conditions of the contract*. Obviously, the testing showed the reward to be obtainable without useful learning - which required little time or effort. (There were cases where this could be said of system students' performance, so far as I know only among those graded by the novice teachers. However, the message given the system student who made an average performance on the evaluation test would certainly have been that he should try again.)

I discussed with the Department Chairman the different progress rates that we had observed in his trial of the system. He seemed to understand, and certainly agreed to, a teaching strategy which was a rational response.

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In the fall of 1970, three sections of students were scheduled for the same hour and for three adjoining rooms. Two teaching assistants and I cooperatively handled the instruction. On each class day we posted a brief description of the activity scheduled for each of the three rooms. One of these rooms was always devoted to conventional instruction based on assignments in the textbook which all students would later use. The other rooms were used for the operation of the system. This meant that the student either took progress checks or studied from his program, in the latter case seeking such instructional help as he needed. All students were advised to check their success by attempting the self-quiz at the end of a programmed lesson and all students were required to satisfy the progress checks, however they had studied.

A Reversal. This plan amounted to a reversal. Instead of allowing students to choose between negligible standards and those embodied in the progress checks, to which many students responded by claiming that they couldn't learn as well from the program, the choice available to them was, "Which way will you satisfy the criterion performances?" In other words, in this group choosing conventional instruction was not reinforced by a less demanding (in fact, trivial) requirement.

By the second class, 90% of the students were using the program. All of the others used the textbook successfully, for a time. A noteworthy observation is that, while successful in passing the progress checks, they almost never made use of the conventional classroom. These were especially capable students. However, it was later established that each one of them had sometime found it necessary to shift to the program (not necessarily permanently) and had found that the program worked when their normal study had not. It was clearly shown that, whatever was said, students who had to perform preferred and needed the system and materials which supported it.

On this group's final examination the items which the department committee had used to test all students were included. The median performance on these items, including those of some students who had not attended class for a month, equalled the score at the 85th percentile of the department's prior testing. Nevertheless, before this semester had ended the Department Chairman informed me, without investigation, that this experiment was a failure. It was at about the same time that I was encouraged by the Regional Office to resubmit the proposal for this project, unfortunately delaying its start until the Acting Chairman took over.

Attrition. The reverse of the performance coin during this semester of instructional options, especially as viewed by the department, was the small percentage of the students assigned to us by the computer who actually earned credit for the course. Although out of keeping with the experiment, since both types of instruction were offered, students were allowed readily to transfer outside it. During the first week, these students plus those who decided against electing accounting amounted to 30% of our original list. Another 30% failed to complete the semester. The latter, however, included several quite-successful students who chose a reduced load. (Emphatically, one urgent reason for getting objectives considered was the utter irrationality of an assignment sheet which had been increased by at least 25% in a recent year.)

The practice which generated the most adverse student comment was that designed to highlight the schedule which a student had to maintain to be ready for group instruction. As a matter of motivation, therefore, deadlines were announced for the completion of two different stages of progress. The first of these came just before the deadline for withdrawal without grade. (Deadlines were extended in case of illness, of course.) These deadlines were set very conscientiously on the basis of experience. It was not at all certain that those who met the deadlines would be ready for the group instruction, but the principal investigator knew that not meeting the deadline was a certain sign of eventual frustration. Moreover, no student was failed on a technicality. If he claimed to have overlooked the rule, he was allowed to show whether or not he had made the necessary progress. (No one ever had.) According to the department chairman, it was not the deadlines which were criticized but my unwillingness to award withdrawal-passing (when the deadline was justified only because passing was impossible!) It was dismaying to have this action suggested with no sense of an ethical contradiction. Obviously, it is just such unilateral violations of agreement that preserve bad rules. (The deadline has since been moved back.)

Coordination among the three teachers made for an extremely busy semester. I was also completing the modification of progress checks for better behavior maintenance - a need identified by analyzing the sample on which my memo to the department reports. Attrition was increased by the removal of some progress checks which did not effectively test everything necessary for success on the next lesson. The standards employed in the semester were deliberately adopted. I conscientiously considered whether some members of this class would be incidental victims of a one-semester abberation. I can not believe that misleading them about their competence would have been a service. In fact, it teaches failure. Further, if those who did not try (transferred or dropped in the first week) are excluded, attrition was not abnormal. Some failures were identified sooner by the deadlines. The choice I saw was between an endless repetition of pointless, ineffective ritual and a demonstration of the absurdity of present plans which I hoped would generate sufficient student criticism to force replanning. I expected to be criticized. I recall thinking, "At my trial they will have to consider what is rational." It was here that I misjudged the Department Chairman. I have never been allowed to testify in sufficient detail. My assessment is that student and faculty complaining, the latter never directed to me, made rationality too burdensome. Except for his initial reaction to my memorandum on standards, he has avoided data ever since. With the passage of time it has become increasingly clear that because learning is not customary it is regarded by many faculty as not necessary. To act on a contrary assumption thus violates student expectations and generates administrative sympathy for their complaints.

The Distinguished Sections. The failure of my strategy to secure consideration of performance objectives made it very important to the experiment for me to alleviate the reputation incurred. Whether by skill or luck, the worst possible time was chosen for differentiating my sections from others. During the first term under this arrangement, a total of eighteen students enrolled for two sections. I began with an announcement that a passing grade was guaranteed to anyone passing all required progress checks - a task previously expected by mid-term. Ten students remained enrolled. Five passed the progress checks. On three parts of the testing committee's test, used on the final, all were at or above the 96th percentile for its original administration. (An average group exceeding 100 would be needed to expect five such results on ability alone!) The other five made amazing progress during the last two weeks of the term. All of them had taken a month or more of "vacation" in the middle of the semester.

A Personnel Grievance. Much of the information in this case study was collected and organized for a personnel grievance case. There were many motives for entering this wonderland. Those which are relevant to this case study included the need to remove the environmental constraints implied by the de facto standards referred to by my memorandum to the department and recognition that the analysis of faculty attitude would be an important part of this report. To consider my performance in the areas of teaching and research seemed unavoidably to require the equivalent of the "trial" which I have sought to bring about. The practices I have identified clearly raised the question, "What in the world are the performances which my colleagues treat as adequate terminal behaviors?" The grievance process seemed to afford a means of investigation. Moreover, I was determined to allow (require) others to be represented by their own testimony, as I have not been. Alas, two years have been insufficient to produce a record. One answer to, "What happens if innovative efforts are misunderstood?" is that explanatory efforts are apt to be extinguished by postponement.

A Bad Year. Once again, some of my experience is attributable to the ambiguity of a new procedure. Indeed, the particular procedures for personnel evaluation which figure, incidentally, in this case were unique, in some respects, to one year. In the past it had been a matter of right for a faculty member to present his own report to the School Administrative Committee for the purpose of merit evaluation. Thus, years of precedent led me to expect, and others mistakenly to confirm, that I could tell my story to a School Personnel Committee. This assurance was given as late as the day before it was denied. So far, there has been no such hearing at any other level. There has been no seeming concern for the consequences of this mistake. A powerful force supporting all University custom, the evaluation process outlined in Exhibit A (page 18) is barely believable. Of course, this contrast is an unofficial interpretation, and I continue to believe that it will ultimately be contradicted. It is, however, an exhibit which I prepared as a way of saying, "This is what I understood you to be telling me. Is it really correct?" The occasion for which it was prepared brought the answer, "Not quite." Others say, "Yes."

Between the meeting at which my experiment was modified and the meeting at which negotiations with the project director were reported to the Department, I met with the Department Personnel Committee. I did so only because all of its members had voted for the labelling of my sections and because, as earlier reported, the chairman of the testing committee, who had expressed such antagonism, was also on the Personnel Committee. At the time, I felt that clarifying the considerable misunderstanding might alter the apparent sentiment. Although I did not know it, and could not recognize it from the meeting, the Investigating Committee report tells me that this committee's purpose was to inform me of a decision they had already made. After an entire morning spent in preparation, I found that the meeting space was available for one hour. With a late start, interruptions to warn me against carrying out what I had contracted to do, and a need to explain unfamiliar behavioral ideas, I was unable to complete my first point. I was able to detect no concern for this, even from one committee member with whom I completed the point (and expressed dissatisfaction) after the meeting had ended. I was later faulted for not insisting on more of this futility. All committee members are C.P.A.'s. Their Code of Ethics states: "Expressing an opinion ... a member or associate may be held guilty of an act discreditable to the profession if ... (c) he is materially negligent in the conduct of his examination or in making his report thereon; or (d) he fails to acquire sufficient information to warrant expressing an opinion ..."

Throughout this time I was working every available minute to respond to the cooperating instructor's wish for early availability of the Bad Debts lesson (Methods, p.8). Without any of the harrassment I experienced, I was in the situation of undertaking, with a

EXHIBIT A

A one-sided evaluation process

Faculty member	Evaluators
1. Must provide data and persuade unidentifiable value systems. His mistakes affect his welfare.	Need not reveal whether they know the data. Need not say how they used faculty data, but may introduce and use any other data, as they see fit. Need not declare their values or illustrate how these were applied, unless they wish to support faculty member. Their mistakes affect faculty welfare.
2. Must meet every deadline and bear all penalties for failure to do so. That is, misunderstanding and unintentional omission in their reporting may not be remedied. The technicality is more important than the fairness of the evaluation.	Are well-protected from revealing error or negligence. Need not change evaluation when error is revealed. May introduce false or mistaken data, which, when disproved, turns out to have been irrelevant to the evaluation. When evidence is corrected may find, without explanation, that evaluation is unaffected. (That is, may mix "important" and "unimportant" comments so that faculty member can't distinguish.)
3. Cannot get a clear, reliable statement about the period on which he is being judged.	May refer to whatever period suits their disposition, but need discuss (if anything) only most recent year.
4. Is responsible for all factors affecting his performance, whether beyond his control or not. Is not excused from responsibility when he has specified his needs in advance, and has been encouraged by administrative action to go ahead.	Need not show that they know all evidence, or how they considered the faculty-member's data. May, for example, contribute equally, or even more, to a negative result; but assign all cause to faculty member, even if faculty has seemingly reliable assurance of appropriate contributions.

5. Must defend and justify his opinion of his own work. May not establish agreed goals, in advance - even if he wants to. Yet he must commit himself to goals to secure support for research. He should commit himself to learning goals. Students need it. Yet he cannot get assurance of what he will be allowed to do.	Need not reveal contradictory opinion (the ones likely to be challenged) - only confirming opinions. Decide whether their own or different opinions are most persuasive. May contradict data with opinion. For example, may continue to state belief in hypothesis which has been strongly contradicted without saying: a. whether they know of contradictory data b. how their opinion might be justified. May introduce new, personal criteria of worthy performance at any time. They need not defend them, only state them. May apply discriminatory tests of different member's efforts.
6. **Failure to answer questions to the satisfaction of evaluators (even unstated, unanticipated questions) is failure to report adequately.**	Need not answer questions if the questions pertain to faculty member performance which would be judged meritorious. Specifically, need not reconcile judgement that efforts are "worthwhile" with "so unsatisfactory that". Or need not reconcile merit for less (or even equal) learning, but no merit for more or equal learning.

half-time teaching load, what I originally proposed for full released time. Moreover, the course I was teaching was both new and jointly-taught. One might feel that merely managing to survive the semester was meritorious.

The Department awarded no merit. The Dean subsequently raised this to a category characterized as "below average." The Acting Chairman included in his evaluative comments an assertion about unsatisfactory teaching based on an incident to which he admitted having no knowledge. Neither I nor another team teacher of the course in question had been consulted in any way. The investigative committee regarded this as unimportant. However, immediately after its report (five months later and after final merit decisions) the AAUP grievance chairman secured the removal of this reference from the record. It has since been contended that this matter was not important to the evaluation and the University Tenure and Grievance Committee seems not to feel that the tacit admission of negligence is evidence of bias.

A Formal Grievance. It is important to remember that we are talking of the consequence of not teaching students to fail and of the absence of responsive, friendly feedback in the system - not the personal problems of an individual. It was June before I assembled the 11 copies of a carefully documented formal grievance. I then learned that nothing more could occur until after some elections in the fall, but I was given every encouragement by the outgoing chairman (with whom I remained in contact in his role as grievance chairman for the local AAUP chapter). The next activity was in November. The new committee did not feel that a grievance existed, but asked their chairman to make sure. He eventually became very supportive, but now led me to expect nothing and to bring a lawyer to the conference with the subcommittee. I was really surprised when the outcome of the meeting was an agreement that the following memorandum would be written:

> The University Tenure and Grievance Committee has received and examined a grievance brought to the committee by Professor Frank Singer of your department. Subsequently, (acting chairman) has responded as has the departmental personnel committee. There has also been a study of this problem by a committee of the School of Business.
>
> Professor Singer has asked for a formal hearing conducted by the Tenure and Grievance Committee. A subcommittee made up of (committee names) have subsequently talked with Professor Singer and would like to propose that this problem can be handled on the departmental level rather than by formal hearing.

Professor Singer's grievance is that the record, as given in his personnel evaluation of 1971, contains in it from him a specific reference to work which he has performed and is performing relative to developing teaching methods in accounting courses. The comments by the department head, although referring to Professor Singer's teaching abilities and other activities, seems to ignore completely the specific project which Professor Singer is putting forth as his activities of the year. The responses given to the grievance again ignore this particular point. If a man should undertake, with approval, to develop methods of teaching as part of his research as well as his teaching obligation, then it would seem improper to reject this work without proper evaluation.

We therefore suggest that if negative comments are to be inserted into the record of Frank Singer, they be substantiated by evidence of proper methods of evaluating his project. When Professor Singer is attempting to develop methods for substantially improving the teaching of the fundamentals of his field, the mere observation of popularity of the course does not seem a complete or adequate test.

The Tenure and Grievance Committee does not wish to project itself into the prerogatives of a department to determine the curriculum, methods and standards. We do, however, feel that a member of the department does have the right to request that his work be evaluated in terms related to the objectives he has put forth for his work.

Justice Delayed is ... The memorandum is dated April 4! It was not, in fact, delivered to the Department Chairman until after mid-April. After a week I inquired how the Department Chairman would respond. To my astonishment, he indicated that he had not expected to. He had provided two clarifying memoranda for inclusion in my grievance, both of which pleased my attorney. In one of the memoranda he had written: "Frank's analysis of the comparative testing in the spring of 1969 poses some legitimate questions regarding the data originally reported by the committee." He was now refusing to have the legitimate questions explored.

Grading. One might sum up the personnel evaluation procedures, obviously a major component of the University system's management of the contingencies of faculty reinforcement by saying that it is essentially a process of grading and that there is very great resistance on the part of the administrators to implementing, operationally, its supposed feedback function. Unless one wants to view the matter as a violation of religious freedom, there is a great deal of superstition involved. So far as teaching goes, the results being evaluated are often, perhaps, invariably, much more the product of the administration than of the teachers being evaluated. (Administrators grade others on their own performance!)[5] As often as I could, I have supplied the Chairman and Dean with indicators of the support I would need, which they have often acknowledged and even praised. All authorities seem to agree, but here is an especially clear and well-stated example which I used. (The emphasis is supplied.) (Bratten, 1.)

> "Educators who elect to develop a system to manage some aspect of their operation should be cautioned that this effort can have revolutionary effects on an organization. Those who take this step are committing themselves to results, and must therefore be prepared to view their methods, or means, as hypotheses. Moreover, it is essential to understand that precisely defined and measurable objectives are the sine qua non of the systems approach. In practice, the task of finding and constructing the instruments that will define objectives in precise, measurable terms is a critical activity, and consumes a major part of the energy used to develop a system.
>
> It needs to be made clear that the systems approach merely establishes a requirement for objectives; it does not, in itself, produce them. Choosing objectives is--as it always has been--the clear responsibility of the highest authority in an organization. Unfortunately, there is no way to ease the burden of this responsibility. When a school official--or perhaps, more appropriately, a school board--specifies precise and measurable objectives for a school or school district, the organization can then take a rational and manageable approach to improvement. Without this specification, improvement is an undefined term, and attempts at improvement must be regarded as whimsical.

Although I do not believe one could secure a statement of this policy, it has become abundantly clear that the present University

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[5] See also pp. 31-2 of this report.

EXHIBIT B

Summary of Performance Deficiencies Observed in Senior Class, Fall, 1970

Why students should do well:	What has actually happened:
I. 4 people cooperate II. They have a textbook with examples. (formulas for statement items) They have 4 periods of print-out for their own firm. III. They have:	*Nevertheless, by the fourth class only 4 of 10 teams submitted the assignment on time. One team said, "We've spent six hours, and we just can't do it! We don't want to just put down numbers." (Cash budget or cash flow forecast)*
a. time to consult references.	*Many elements of the plans violate game rules(e. g. specified % of sales which will be receivable not observed).*
b. opportunity to ask: 1. about unfamiliar terms, etc. 2. where to find discussion of topics, statements, etc.	*Different elements of the report contradict each other. Most collected all sales then collected receivables in the next period.*
3. for interpretation of book and print-out.	*Quarterly data would not sum, even approximately, to annual--although later some teams added 4 quarterly balance sheets to make annual repart!*
IV. Instructor comment on a 1st attempt at each part of plan.	*In only one case did a formal report correct every deficiency to which comments called attention.*

Each team was then invited to come for an interview. They were told that any amendments they were now ready to make would be treated as though they were the original plan.

NOT ONE TEAM BROUGHT ONE CORRECTION!

of Massachusetts grievance procedure substitutes the whim of a committee for the needed specification. Moreover, the committee is elected toward the end of the academic year in which the performance to be appraised has already occurred!

Consequences. Again, it is the consequences - the effect of system defects on the behavior of teachers - which deserves recognition. The course which I helped teach during the first semester of instructional development provided a graphic and distressing example of what is being defended by "collegial authority," as applied. The course is a simulation of management decision making. Roughly the first two weeks are devoted to assignments which are installments in the preparation of a plan for the management of the simulated company. A major part of this activity is the preparation of pro forma (forecast) accounting reports which show what the students expect their company plan to produce. About mid-November my colleague and I requested an interview with the School Administrative Committee to discuss an "academic emergency." Exhibit B outlines the observations that we had to report. The essential message is that nine of the ten teams had failed to demonstrate the achievement of any goal at which several core courses including the elementary accounting course, are aimed. It is certainly not contended that the observations are the result, merely, of one poor course. The vestigial planning for behavior maintenance can be ignored by students, and this maintenance is essential.

There was no response from the Committee to my question about how to proceed. Typical of the stress on technicalities which greets efforts to define a problem was the response that there was no emergency because performance had probably been no better last year. One might call this an emergency of complacency.

At this point in the course my colleague collected student opinions. Only one was negative. Many indicated that this was the best course they had had, yet fewer than half the teams had made satisfactory plans at the end of the last class period. The criteria were that the plans not contradict the game rules (used for 19 decisions) and that they be internally consistent. By requiring that these criteria be met, but allowing extra time, we secured a satisfactory plan from every team. Nevertheless, I received complaints about the failure rate. The response that only when a score on the final (open book, 20 objective questions) was chance or poorer was a failure awarded did not evade this criticism. There was no terminal assessment of student opinion, but it was clearly viewed as very negative by those who criticized.

"Essentials". Of course, the Acting Department Chairman was present at the Administrative Committee meeting. I was not present at the next Department meeting; so I do not know whether his asking the curriculum committee to consider the adequacy of the first accounting course was in any way connected to the foregoing. Soon after, much to my delight, the committee reported that it planned to formulate objectives for all levels of financial accounting. It asked the Department membership to forward its views on what accounting knowledge was "essential", separately, for accounting majors and for non-accounting majors. I was suspicious when three weeks were allowed, but I replied with the basic memorandum that I had prepared the year before. The covering memorandum which follows reflects my disappointment in what was actually under way.

> "I'm very pleased to see the question about what is *essential* for a business graduate--since I assume this implies essential to courses which unavoidably lie enroute to graduation. As you will see, I don't think it useful to restrict one's attention to "accounting knowledge," and I can't think of anything essential to a non-major that I wouldn't consider necessary for a major. However, "essential" is the right question to consider, but one also needs to say how you think you can tell whether it has been attained--for the sake of communication. (An adequate answer by March 10, is therefore impossible, but a partial answer is a step in the right direction.)
>
> Experience has taught me, however, not to take these things at face value. While I found some uncertainty about what the committee really plans to do, these members with whom I've talked seemed to think that it is likely that
>
> > a list of essential things will be compiled, but that *non-achievement of these* → *essentials would not be a barrier to a* ← *passing grade*!
>
> If this is correct, I certainly don't want to waste anybody's time. So long as it's true that the way a student is told he needs to spend more time on a goal is to give him an F (a very bad practice, which a look at what is essential, and the facts of human diversity, should lead us to condemn) then I *do* mean by "objective," that-without-which-it-isn't-good-enough.
>
> The attached is only a slight re-working of an earlier memo. If we can get no more than this in a semester, a year or three years, it is better than a little memory of details and

> half *impossible answers* on very fundamental principles. I *do* want to emphasize that I'm talking about what a student *learns* to do--not what he does along the way, but when he does less; he has to *show* that he can do better--but soon, not by taking a whole course again.
>
> I *am* talking about what a student *intends* to do. For example, if he answers "true," to the statement, "Expenses are a kind of liability." I want to know what he would do if we give him another test almost right away, include that item, and give him no indication that we are interested in that particular item. If he would miss it again, he thinks wrongly about two crucial concepts. I'm not proposing we test each student's every error this way, what I would point out is that there are many such parts to any test (most tests?). It's wrong to believe that, by chance, a student did five times, all on the same exam, what he would do (if he knows) once in a hundred times (in each case). But he should if such a freak did occur, so [illegible] the chance to show that it did.
>
> I'd just add, for now, that these (attached goals) still apply at intermediate and advanced levels--and, incidentally, if 130 isn't going to use and maintain these capabilities, it's pointless to teach them in 120--so these are objectives for 130, also. I'd be glad to talk to the committee to clarify, BUT it's a waste of time to make a "wish list" that leaves unspecified what we will teach *by example* is really, truly essentially essential and necessary. If you want that, you want to know what tests (including observations) should be used, AND how to grade those tests. Keep up the good work, but don't expect miracles by March 10.

Ultimately, this committee recommended a new textbook for the elementary course. Its report included a list of "objectives" in which the most frequent term, by actual count, is "*et cetera*." In meeting, the committee changed the word "objectives" to "topics," explaining that the task was too large to be completed before the next year and stating their intention to continue it. They did not do so.

As planned and implemented, the revised course abandoned responsibilities to courses which depend on some capabilities that elementary accounting had been supposed to achieve. I know that the department chairman shared my concern. He required two attempts from two different groups to produce some operational objective statements, without success. He also asked me to submit some sample material pertaining to my intentions. I do not know what happened to them. I don't know when he changed his mind, but now he acts as though these events had not occurred. The performance of the chairman is reviewed by the department every three years. His review is due, and I am not the department.

"Reconsideration." As reported under "Methods," (pp.II-2) the special labelling of the system sections was not removed. My motion for removal lost by one vote. Included in the majority were two students with whom I had no acquaintance. They asked me no questions. Prior to the meeting, the following two memoranda were distributed:

> The Undergraduate Curriculum Committee recommended to the department members in regard to the distinction between Accounting 120 and Accounting 115:
>
> Last fall, when the Committee recommended to the department that students be given the choice to enroll either for a regular section of Accounting 120 or for one of Frank Singer's "individualized" sections, the Committee agreed to review its decision this spring. At its spring meeting on March 31, 1971, the Committee did review the case.
>
> It is the unanimous decision of the Committee that the distinctions between Accounting 120 and Accounting 115 should continue and that it should not be rescinded for a semester during the 1971-72 academic year.

I replied:

1. At no time in the past have I discussed with the committee either the past or present practices in my sections of Acctg. 120. Before the committee was fully constituted I did answer questions about my research design - not realizing that anyone would presume to alter its features.

2. I believe many of you who were present when (Committee Chairman) reported her conversation with (project director) will be surprised to learn, as I was, that the discussion of conditions which

would warrant removal of the labelling for purposes of the research did not imply that if this spring's enrollments were too low to serve as treatment groups in the research design the committee might nonetheless recommend against the temporary suspension of labelling. The lack of enrollment was the one condition which I felt had been clearly identified as a reason not to label.

3. Because it was necessary for me to talk to (project director) last week about postponing the deadline for a progress report, I know that it was his clear impression that the research would be protected at least to the extent of removing the labels if the enrollment this spring would make inadequate (experimental) groups.

4. It seems to me the committee should reveal some reason for its unanimous decision.

Afterward, I asked one committee member for an example of what he thought would have led to a favorable recommendation. He could give none.

The project could not have been completed on time. To give due credit, there was ready agreement from the Chairman and Dean to the extra semester of involvement. It in no way detracts from their good intentions that the consequence for me is that I lack resources for developing the lessons, but have them for establishing any inadequate outcome. The remaining events of direct significance to the project have been covered under Methods.

More Grading-Conflict of Interest. The case study of what happens to a teacher who undertakes to have students learn more would be incomplete without a report on personnel evaluation of the first project year. Again, the department awarded no merit and this time was sustained by the Dean. The initial reaction to my complaint that two of the members of the department Personnel Committee were respondents in my unresolved grievance of the prior year was sympathetic, but ultimately it was concluded that no exception could be made - despite the fact that Personnel Committee members, themselves, are evaluated only by the Dean.

My personal dilemma was the expectation of a hearing on the prior year's grievance, in which my main demonstration would be that the respondents could not state my version of the personnel issues. I did not, therefore, appeal the personnel action on my case within the department.

Conflict of Testimony. The chairman's comment includes the statement, "He is in the unfortunate position of being involved with research activities which are not appreciated by his colleagues, and has been told that continued efforts of this nature will not be rewarded." In the prior year, the Acting Chairman had attributed this position to the Chairman, while I knew the facts to be otherwise. One of the memoranda which the Chairman wrote for inclusion in my formal grievance says, "What I said to him in the 1969 evaluation was that he had demonstrated an ability to engage in other kinds of research that are more likely to be appreciated by other faculty members and, therefore, (be) more rewarding."

Consequences are Policy. I was able to secure a hearing from the School's Personnel Policy Committee without the presence of the two respondents (however, I later learned that they had participated in the discussion of my appeal). I felt the hearing was sympathetic. No exceptions were expressed to the case I presented. It was indicated that I answered the few questions raised in a convincing manner. However, the committee did not recommend an altered merit award. The nature of my appeal is revealed by the questionnaire which I sent to each member of the school committee who had heard my presentation. Again, the major purpose was to make sure that they had an opportunity to be represented exactly as they would wish to. The point I tried to make with them is that allowing the department decision to stand, coupled with a failure to contradict the views which I had expressed and the evidence I had presented to contradict the department decision, led me to three conclusions which I was attempting to verify or clarify. No one answered the questionnaire. It follows:

Am I correctly interpreting the SBA Personnel Policy Committee?

1. Student opinion summaries of dubious validity, negligently compiled, are more important indicators of "teaching effectiveness" than data on student performance "which is a complete answer to the suggestion that my teaching is ineffective."

   Choose one.
   1. yes   2. yes, with qualifications
   3. no   4. no, with qualifications

   Qualification of 2 or 4:

2. A very important criterion of faculty evaluation, though one nowhere stated, is that a faculty member should engage in "activities" appreciated by his colleagues, only. Neither others in his discipline nor members of other SBA departments are colleagues, within the above usage.

   Choose one.
   1. yes   2. yes, with qualifications
   3. no   4. no, with qualifications

3. I should not have attempted to fulfill the contract on which my research was based (since this is not appreciated).

   Choose one.
   1. yes 2. yes, with qualifications
   3. no 4. no, with qualifications

   Qualification:

The chairman of this committee did inform me that they had recommended that I be told what I should have done to deserve merit. When I inquired about this, the Dean said that the recommendation had seemed to him perfunctory. It said, "Voted: to recommend to (Dean) and (Department Chairman) that Professor Singer receive explicit instructions on a definition of performance deserving merit recognition for him in the future." Upon my inquiry, the School committee chairman attested to the committee's seriousness and observed that they had not only sent the memo, but had discussed the matter with the Dean as well. As this is written, it has been three months since I received a memorandum in which the Department Chairman was instructed to supply the recommended statement "as soon as possible."

New Rules; What are They? In the meantime, the Department has acted again. They have removed the special numbering of my sections. Whereas they emphasized concern for students in not removing the labels a year earlier, the concern now is for "an unfair burden on instructors teaching Accounting 120." The following motion was also passed.

> "IT IS MOVED that programmed or individualized instruction of the introductory accounting course be discontinued after the 1972-73 academic year unless enrollment in the Fall Semester (1972) increases to a level comparable to that of lecture sections and a comparable percentage of the students initially enrolled in programmed or individualized sections complete the course within the semester. Data regarding final grades are to be submitted to the Department Chairman by the end of the grading period."

Aside from the error in the implied view that two years of labelling my sections will not affect next semester, the obvious unfairness of the action is the pretended separation between enrollments in my sections and standards in other sections. If I wanted to engage in competitive debasement of standards, I am prevented by lack of information about what will be done by other teachers. The outcome will certainly be that "programmed or individualized instruction of the Introductory Accounting course be discontinued." While initial enrollments may be comparable, it is impossible to give a class accurate feedback about their mastery of material without drawing a sharp contrast with the requirements in other sections and without revealing that even a minimum is too much for a significant fraction to accomplish in the time they have allowed in their schedules for this course. To fail to give accurate information is to prevent adequate achievement by several who, when accurately informed, can and will succeed. Requiring that the percentage of students who complete the course parallel that of other sections is a requirement that I guess what standards will apply in other sections.

A more punishing consequence of this action is my inability to get an interpretation of the prohibition. As stated, every activity and feature of my teaching is proscribed. There is no way to plan altered efforts which will not be subject, *ex post facto*, to the claim that I have done the forbidden.

Avoidance, again. Some colleagues encouraged me to respond to the legislation with a proposal on standards. I submitted the following to the department curriculum committee.

> "No course shall be offered in fall '72, or after, for which the teacher(s) has not filed, at least 30 days in advance, 5 sample test items, *however modest in difficulty*, which every student who passes the course will be able to satisfy by the end of the course.
>
> Scoring directions (and sample solutions) will accompany the test items, and the teacher will provide an answer, *satisfactorily clear to the questioner*, as to how any hypothetical answer is to be evaluated.
>
> Teachers agree to demonstrate that each student who receives a passing grade *has* succeeded with items like the sample. They also agree that in the immediately subsequent semester two failures to satisfy the items (during the first two weeks) shall constitute sufficient evidence that this requirement was not met in the prior course."

The committee recommended that the five items be submitted as a basis for *discussing* standards. Consideration of both proposals was postponed. The last meeting adjourned without either being considered.

Strange Secrets. Naturally I complained to the Dean about "unconstitutionally vague" legislation. He has also reviewed my grievance case. At first it appeared to me that I was finally making progress. It seemed to me that every feature of my grievance case was acknowledged. I was invited to write a brief statement of what I would consider to be a satisfactory resolution. I do not understand the reasons for its rejection. (Policy wouldn't allow it.) I cannot say whether I invariably misinterpret these exchanges or whether I somehow miss a vital logical link between the evidence on which there is agreement and the decision which I think it contradicts. Of course, to me the rules seem very unpredictable. The nature of this dilemma is revealed by this excerpt from one of my attempts to find out. From my memo:

> "Specifically, will you be responsible for any of the following things which you said to me (by putting them in writing)?
>
> 1. That it looks as though I have a grievance against (Acting Chairman).
>
> 2. That there is more learning in my classes.
>
> 3. That my enrollments are influenced by the different standards in other accounting sections (and that you had had similar experience in your own teaching).
>
> 4. That I should reduce my standards regardless of the effect on learning (rather than that the department should raise its standards). In this case the only responsible way to advocate such a change is to state precisely what standards I should use and to absolve me of any responsibility for the consequences of doing so. I've asked for that for years. There is barely time to operationalize these instructions. I need a very long lead time to modify the work of many years."

The answer to my request for written confirmation was negative. The accuracy of my interpretation was not commented on except for pointing out that "I will accept that" (there is more learning..) might only mean that my contention was accepted for the sake of argument. I am still not sure whether it did mean that, and if the data is not believed I don't know why. Not only have I made one mistake about the consequences which would follow particular behavior, but I have been unable to find out what mistake I made.

The matter is currently under appeal to the Vice Chancellor for Academic Affairs. He indicated that I was entitled to a "statement of reasons and means" from both the Dean and the Department Chairman. Both have supplied memoranda which say "I cannot."

There are grave consequences for trying to improve learning - at least if one succeeds. There are rewards for the use of methods which lack even the potential of success. There is unwillingness to say so.

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1. Bratten, Jack E. A Systems Approach to Improving a Continuation High School (unpublished paper, Systems Development Corporation) p. 5.

2. Doob, Anthony N., "Society's Side Show", Psychology Today, vol. V, No. 5, 1971, p. 47.

3. Simon, Herbert. "The Job of a College President", The Educational Record, Winter 1967.

4. Singer, Frank A., "Progress in Programmed Instruction", The Accounting Review, October 1965, pp. 847-853.

5. ________________, "A System Approach to Teaching the Accounting Process", The Accounting Review, April 1970, pp. 351-364.

6. "The Keller Plan", Memo to the Faculty, Center for Research on Learning and Teaching, The University of Michigan, No. 48, April, 1972, p. 5.

APPENDIX B

CRITERION TESTS

Pages

Midterm Examination 1 - 6

Final Examination 10 - 20

First Attempt Progress Checks:

- Bad Debts 21 - 26
- Cost of Borrowed Money 27 - 28
- Petty Cash - Bank Reconciliation 29 - 34

Other Progress Checks (Complete versions of those from which final examination items were taken are omitted.) 35 - 59

Midterm exam

NAME________________________

SECTION NUMBER____________

1. Recording transactions (Answer this part of the test in the yellow booklet.)

I. This is a transaction which has been entered in UNtitled T-accounts inside the yellow booklet.

TRANSACTION A:

Donated $10 worth of stamped envelopes to the Red Cross.

(a) Find the titles of the two accounts which should be used for it in the following list, and write each title on the appropriate account.

Advertising...........	$ 12	Donations................	$ 5	Office Equipment....	$ 35
Accounts Receivable...	$ 40	Due to Creditors........	$ 550	Prepaid Commissions.	$ 40
Cash..................	$ 100	Gain on Sale of Land....	$ 4	Real Estate.........	$3200
Customers' Advance Payments...	$ 20	Hugh Ess, Capital.......	$2680	Supplies on Hand....	$ 22
		Income from Services....	$ 100	Taxes Due...........	$ 100

(b) Enter the balances of these two accounts as given in the above list.

(c) Enter the titles AND balances of the other accounts listed (as someone has already done for the first three accounts). The balances are normal for the indicated class of account. Each account must be placed in the section established for its class. You will have a complete ledger when you have done it correctly.

II. Record the proper debits and credits for each of the following transactions in the ledger you established in I, above. When other accounts are needed (MAKE SURE!), you set them up in the appropriate section of T-accounts. BE SURE TO KEY the amounts you enter for a transaction with the letter which identifies it here (no keying, no credit). See I, again, for the example given (A).

TRANSACTIONS:

B. Issued check for $55.50 to Southwest Power Company in payment of the heating and lighting bill received today.

C. Received tax assessment for $120, payable at end of month.

D. Sold land which had been acquired for investment purposes. Received $500 in cash, and a 5%, 1-year note for $1500. The land had been acquired for $2200.

E. Paid clerical and administrative salaries of $300 for the month.

F. Signed our 6%, 60-day note for $3000 and gave it to John Fisher, the local capitalist. Received his check in the face amount.

G. Purchased Supplies on account, Stanley News Company, $200.

H. Sent a bill for services to the City of Toledo, 200 dollars.

p.2 **2. Ledger interpretation**

I. In the ledger of Zelda Finch, self-employed typist, which is shown below:

a. What is the present balance of the Cash account? $____________

b. What is the sum of all credit balances? $____________

Cash

Balance	600	(b)	50
(a)	100	(c)	100
(d)	500		
(e)	10		

Accounts Receivable

Bal.	1100	(a)	300
(d)	900		

Notes Receivable

(a)	200		

Paper & Supplies

Balance	75	(e)	10

Typewriters

Balance	750	(c)	125

Office Furniture

Bal.	400		

Zelda Finch, Capital

		Bal.	2925

Income From Services

		(d)	1400

Utilities Expense

(b)	50		

Zelda Finch, Drawing

(c)	225		

II. In the forms provided (below and next page), show 3 COMPLETE transaction analyses which preceded the entries for a, c, and e in Zelda's firm's T-accounts.

(a) Step 1. (Circle a, b, or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2. **Step 3.** **Step 4.** **Step 5.**

____________ MORE or LESS ____________ MORE or LESS

____________ $____ | $____ ____________ $____ | $____

____________ $____ | $____ ____________ $____ | $____

$____ | $____ $____ | $____

Step 6. { ZERO___(✓) $+____ OR $-____ } { ZERO___(✓) $+____ OR $-____ }

Step 7. If not zero, show account and amount. ZERO ____(✓)

expense ____________ $______ disinvestment ____________ $______

investment ____________ $______ income ____________ $______

revenue ____________ $______

- -

(c) Step 1. (Circle a, b or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2. **Step 3.** **Step 4.** **Step 5.**

____________ MORE or LESS ____________ MORE or LESS

____________ $____ | $____ ____________ $____ | $____

____________ $____ | $____ ____________ $____ | $____

$____ | $____ $____ | $____

Step 6. { ZERO___(✓) $+____ OR $-____ } { ZERO___(✓) $+____ OR $-____ }

7. If not zero, show account and amount. ZERO ____(✓)

expense ____________ $______ disinvestment ____________ $______

investment ____________ $______ income ____________ $______

revenue ____________ $______

(e) Step 1. (Circle a, b or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2. Step 3. Step 4. Step 5.

______________ MORE or LESS $______ | $______

______________ $______ | $______

______________ $______ | $______

{ ZERO___(✓) $+______ OR $-______ }

Step 6.

7. If not zero, show account and amount. ZERO ______ (✓)

______________ $______ expense

______________ $______ investment

______________ $______ disinvestment

______________ $______ income

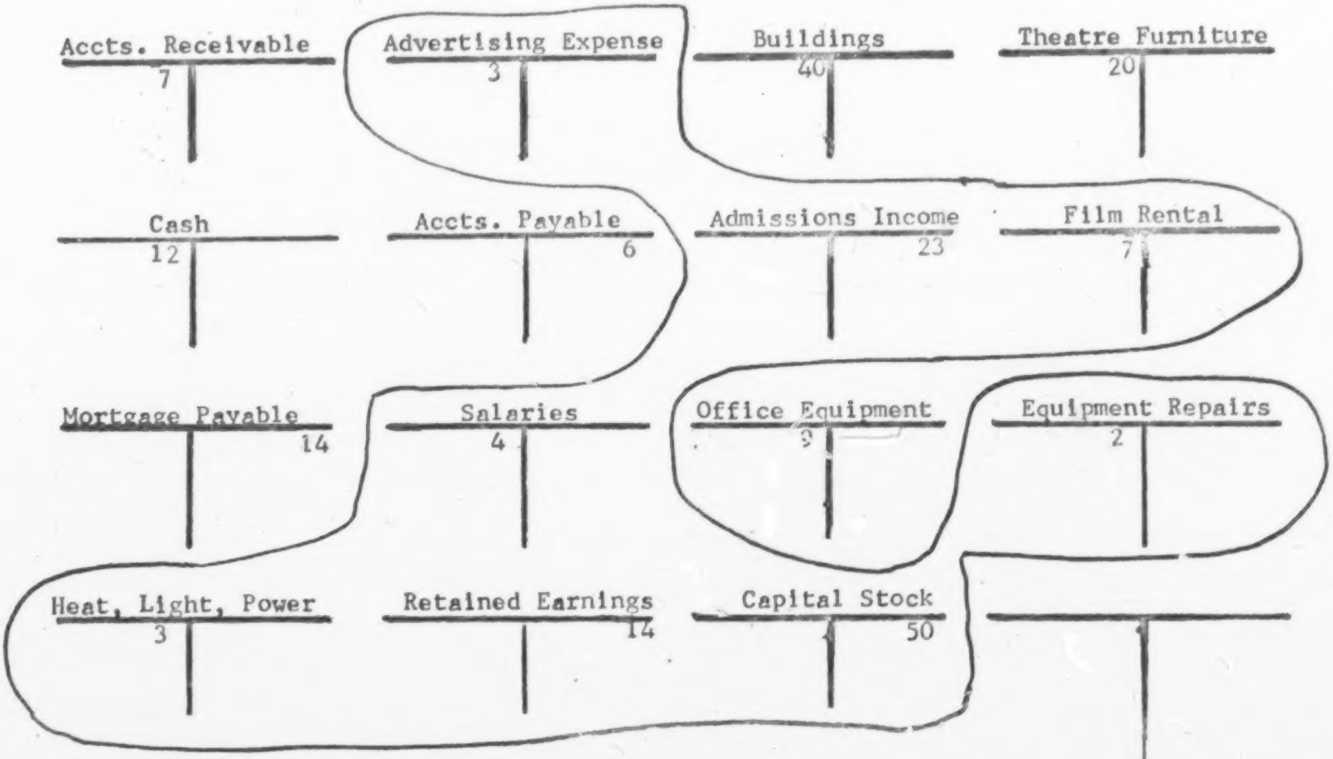
______________ $______ revenue

- -

3. **END OF PERIOD CLOSING:**

A. The accounts shown below are the ledger for Ritz Theater, Inc. A line has been drawn to enclose all of the proprietorship accounts, both permanent and temporary.

Make any correct set of entries to close the books. (You may set up a Profit and Loss account in the blank T-account (OR NOT) as you choose.)


Accts. Receivable
7
Advertising Expense
3
Buildings
40
Theatre Furniture
20
Cash
12
Accts. Payable
6
Admissions Income
23
Film Rental
7
Mortgage Payable
14
Salaries
4
Office Equipment
9
Equipment Repairs
2
Heat, Light, Power
3
Retained Earnings
14
Capital Stock
50

Fill appropriate blank: net income = $________

net loss = $________

B. Closing continued: In this ledger for Craig Duncan most accounts show ending balances, only. However, if there is more than one debit or credit a beginning balance is labelled, "Bal." You surround all of the proprietorship accounts with a line similar to the one in A (prior page). Indicate profit or loss amount below.

Accounts Payable	
	66

Accounts Receivable	
10	

Cash	
70	

Cleaning Equipment	
9	

Cleaning Supplies	
12	10

Customers' Prepayments	
	71

Craig Duncan, Capital	
	Bal. 41
	4

Craig Duncan, Withdrawals	
3	
4	
5	

Delivery Truck	
20	

Expired Insurance	
8	

Income from Cleaning	
5	15
	10

Interest on Notes and Mortgages	
3	

Land	
60	

Notes Payable	
	20

Prepaid Insurance	
8	

Truck Repairs Expense	
4	

Utilities Expense	
3	

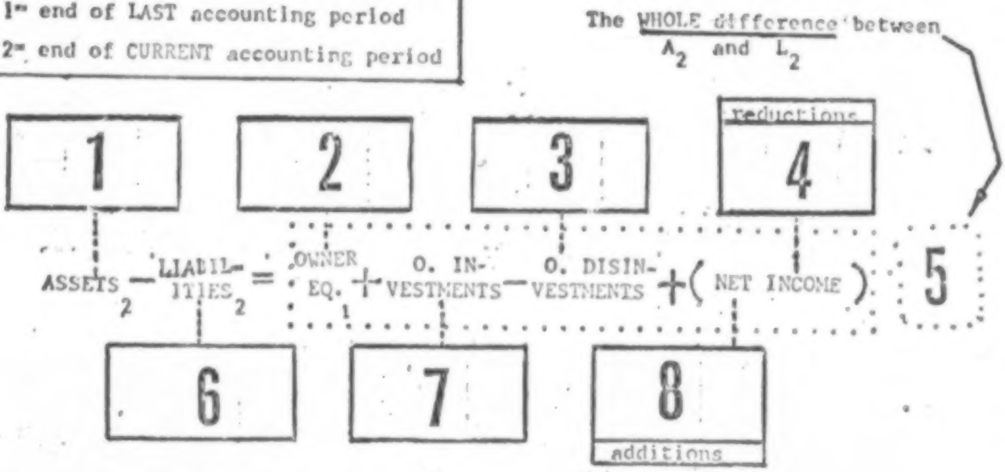
Wages Expense	
13	

Fill approriate blank. net income $__________ net loss $__________

4. Financial Statements (based on prior page T-accounts)

I. At the end of an accounting period the ledger is an equation composed of these parts.

O.= owner's
1= end of LAST accounting period
2= end of CURRENT accounting period


The WHOLE difference between A_2 and L_2
1
2
3
reductions
4
$\text{ASSETS}_2 - \text{LIABILITIES}_2 = \text{OWNER EQ.}_1 + \text{O. INVESTMENTS} - \text{O. DISINVESTMENTS} + (\text{NET INCOME})$
5
6
7
8
additions

Give the dollar amounts from the ledger of Craig Duncan's firm which correspond to each box in the diagram (i. e. give total asset amount for box 1, etc.)

Box 1 $_________ Box 2 $_________ Box 3 $_________
Box 4 $_________ Box 5 $_________ Box 6 $_________
Box 7 $_________ Box 8 $_________

II. Financial Statements:

1. Complete the equation for the Duncan firm's Balance Sheet with the other appropriate box numbers.

   box 1 = box _____ + box _____

2. What Statement reports the amounts to which this equation refers?

   2 + 7 + (8 - 4) - 3 = 5 (numbers are box numbers)

   ____
   (statement name)

3. a. What other financial report is prepared at the end of each year?

   ____

   b. Give all box numbers whose dollar amounts appear on this report.

   ____

OVER
please

ADJUSTING ENTRIES

5. All adjustments are accomplished by one of the following six pairs of changes:

1. an asset is increased and income (or revenue) is increased
2. a liability is increased and expense is increased
3. an asset is decreased and expense is increased
4. a liability is decreased and income (or revenue) is increased
5. an expense is decreased and an asset is increased
6. income (or revenue) is decreased and a liability is increased

Here are several examples of completed adjustments. Indicate the combination of changes, from the above list, of which it is an example.

CIRCLE the appropriate number.

a.

Deferred Insurance Premiums	
680	(a) 510

Expired Insurance	
(a) 510	

1 2 3
4 5 6

---

b.

Unearned Rent	
(b) 300	1300

Rent Earned	
	(b) 300

1 2 3
4 5 6

---

c.

Interest Receivable	
(c) 20	

Interest Income	
	(c) 20

1 2 3
4 5 6

---

d.

Accrued Fees	
(d) 780	

Fees Earned	
	22575
	(d) 780

1 2 3
4 5 6

---

e.

Salaries	
6037	
(e) 349	

Accrued Salaries Payable	
	(e) 349

1 2 3
4 5 6

---

f.

Interest Expense	
68	(f) 51

Prepaid Interest Expense	
(f) 51	

1 2 3
4 5 6

---

g.

Inventory of Fuel	
(g) 75	

Fuel Cost	
205	(g) 75

1 2 3
4 5 6

---

h.

Revenue from Services	
(h) 400	3009

Advances from Customers	
	(h) 400

1 2 3
4 5 6

NAME________________________________

Scoring summary: SECTION______

Your score on this exam will depend on two factors, 1) points assigned to the things you do correctly and 2) a bonus factor which depends on the thoroughness of your understanding and the care with which you work.

	Task	Points	bonus factor points	
1.	set up accounts	11	all right, 2	10 right, 1
	enter 7 transactions	14	" 2	6 " 1
2.		10	all right, 1	
3.		11	all right, 1	
4.	I	8	all right, 1	
	II	7	all right, 1	
5.	classify adj.	8	all right, 2	7 right, 1

Bonus factor:

1-3 bonus points	no bonus
4 " "	multiply points earned by 1.1
5 " "	" " " 1.3
6 " "	" " " 1.5
7-8 " "	" " " 1.8
9-10 " "	" " " 2.0

Score:

1. _____ _____(bonus points)

_____ _____

2. _____ _____

3. _____ _____

4. _____ _____

_____ _____

5. _____ _____

TOTALS _____ _____

X _____

(SCORE FOR EXAM)

ASSETS:

Cash	
Bal. 100	

Accounts Receivable	
Bal. 40	

	(A) 10

LIABILITIES:

INCOME or REVENUE:

OWNER(S) EQUITY ACCOUNTS

$ $

EXPENSE accounts:

Advertising

Bal. *12*

(A) *10*

)))

PERMANENT:

****

)))))))))))))))))))))))))))))))

FINAL EXAMINATION

(Instructions for each of the two parts are given below.)

Part I - pp. B-11 to B-16

NAME ______________________________

Answer this part of the examination in the space provided. (Erratum: the last page is additional space for PART C. You will need some of it.)

not shown

PART A - Merchandise Accounting

PART B - Adjustments

PART C - Cost of Borrowed Money

PART D - Financial Statement Classification

Part II - pp. B-17 to B-20

Answer the objective items in this part of the examination on the answer sheet provided. Read each instruction carefully. (This page may be used for scratch paper.)

A. HERE ARE END-OF-PERIOD ACCOUNTS for a portion of a ledger:

Sales	
	30

Purchases	
20	

Freight-In	
3	

Cost of Goods Sold	

Purchase Returns	
	6 2

Merchandise Inventory	
1/1 (bal.) 15	

Account of inventory on hand shows an asset worth $20 on January 31.

(1) Make entries in the "T" accounts above to place a correct balance in Cost of Goods Sold account. (KEY drs. and crs. which go together.)
(2) Show a journal entry to close the Cost of Goods Sold account.
(3) Show a calculation of Cost of Goods Sold as it might appear on a statement.

1971					
2. Dec.	31				

3.

B. The following information pertains to the Ritz Restaurant at the end of its annual accounting period (December 31 of the current year):

1. Enter and label (on the next page) any account balance of which you are informed in the adjustment data which follows. PUT EACH ONE IN THE SECTION FOR T-accounts of ITS CLASS.

2. Enter (and KEY with the letter identifying the data on which it is based) any appropriate adjustment debit(s) and credit(s). Supply appropriate account titles, IN THE APPROPRIATE SECTION, in addition to those given by the data.

(SEE completed EXAMPLE q.)

q. Machinery having an original cost of $3500 and an expected service-life of seven years, with zero expected resale value, was acquired exactly 3 and one-half years ago. Accumulated depreciation, of course, was last up-dated one year ago.

a. Of the $5000 balance in Advertising and Promotion account, $1,000 represents payments for TV spots to be aired in the next fiscal period.

b. The parking lot was sublet to a concessionnaire on last January 1, for $1,000 per month. On that date the concessionnaire paid the Ritz Restaurant $13,000 for rights beginning on that date. The amount was recorded in "Rent Earned" (and Cash, of course).

c. The accumulated, unrecorded, interest on government bonds owned by Ritz Restaurant amounts to $800.

d. Accrued payroll taxes at December 31 are $2,000.

e. On November 1, 1969 the Ritz Restaurant instituted a meal ticket plan whereby patrons could purchase dining privileges in advance and at a considerable saving. At that time the Ritz sold $3,000 of these meal tickets and recorded the proceeds in an account titled "Meal Ticket Proceeds". At December 31, the patrons have eaten meals which cost them $500 under this plan.

ASSETS:

(assign contra accounts to section for related class)

(11)

Accumulated Depr.-- Mach.

	Bal. 1250
	(q) 500

(12)

(13)

(14)

(15)

(16)

INCOME or REVENUE:

(41)

(42)

(43)

(44)

(45)

(46)

LIABILITIES:

(21)

(22)

(23)

(24)

(25)

(26)

EXPENSE:

(51)

Depreciation-Machinery

(q) 500	

(52)

(53)

(54)

(55)

(56)

C. 1. On the following page, the example and 3 more transactions have been analyzed. They are from the list which concludes this page. TITLES AND AMOUNTS ARE NOT GIVEN for accounts which would record any change in the owners' equity total. You complete those lines.

a. USE THE ROMAN NUMERALS of the analysis forms to identify the description of a transaction by WRITING each one IN THE LEFT-HAND BLANK to which it applies.

b. PREPARE ANALYSES for the other events. IF missing, assume amounts, etc. (Identify your analyses with the Arabic event numbers.)

2. Below are lists of general ledger accounts. Each account is preceded by an identifying letter. Indicate the accounts debited and credited in recording each transaction which follows the accounts by placing the proper account-identifying letters in the columns after each transaction.

GENERAL LEDGER ACCOUNTS

A. Accounts Receivable
B. Allowance for Bad Debts
C. Bad Debts Expense
D. Cash
E. Interest Expense
F. Interest Income
G. Notes Payable
H. Notes Receivable
I. Notes Receivable-Discounted

		Debit	Credit
I	Example: Received cash on account from Lee Berg....	D	A
____	1. Borrowed money from the bank by giving our 60-day, 6 per cent interest-bearing note................		
____	2. Received a note from Lee Berg, a customer, in settlement of his $900 delinquent balance - 60-day note bears 8% interest..........................		
____	3. Discounted at the bank, at 6 per cent, our own 60-day note...		
____	4. Lee Berg dishonored the note of Transaction (2) above when we presented it for payment...........		
____	5. Paid the note discounted in Transaction (3) above.		
____	6. Wrote off as uncollectible the account of customer Thomas Keil..................................		
____	7. The bank notified us that the interest-bearing note of George Ford, a customer, which we had previously discounted, had been dishonored..................		
____	8. Offset the amounts which reflected the note George Ford dishonored (7 above) today..................		

Column SUB-headings (expense, income etc.) only identify class of account used. + or − blanks refer to change in the owner's equity TOTAL (P), regardless of whether the account balance becomes larger or smaller.

Identify first line of each transaction.
****

	ACCOUNT TITLE	Asset change	Liab. change	CHANGE in Owner's EQUITY: expense	income	revenue	OTHER
I.	Cash	+ 50.-					
	Accts. Receivable	− 50.-					
II	Accounts Rec.	+ 120.-					
	Cash	− 120.-					
III	Cash	− 100.-					
	Notes Payable		− 100.-				
IV	Notes Receivable	− 900.-					
	Accounts Rec.	+ 912.-					
1							

OVER

D. Indicate, by circling, the appropriate classification(s) to which the accounts in the left hand column belong. In addition to its basic classification, indicate whether:

ASSETS and LIABILITY accounts are current or non-current by circling NONcurrent where appropriate.
EXPENSE, INCOME and REVENUE accounts are operating or nonoperating by circling NONop, where appropriate.

For contra accounts, write "contra-" above the appropriate item before circling it.

	Revenue	Income	Expenses	NON-operating	NON-current	Asset	Liability	Proprietorship (perm.)
EXAMPLES:								
Cash	rev	inc	exp	nonop	noncur	[✓ asset]	liab	prop
Gain on Sale of invest.....	rev	[✓ inc]	exp	[✓ nonop]	noncur	asset	liab	prop
Accum. Deprec. - Bldg......	rev	inc	exp	nonop	[✓ noncur]	[✓ contra asset]	liab	prop
Accrued Interest Expense	rev	inc	exp	nonop	noncur	asset	liab	prop
Allowance for Depr.- Cars & Trucks	rev	inc	exp	nonop	noncur	asset	liab	prop
Deferred Fee Collections	rev	inc	exp	nonop	noncur	asset	liab	prop
Interest Expense	rev	inc	exp	nonop	noncur	asset	liab	prop
Office Equipment	rev	inc	exp	nonop	noncur	asset	liab	prop
(Insurance Co. ledger) Premiums Collected	rev	inc	exp	nonop	noncur	asset	liab	prop
Sales Salaries	rev	inc	exp	nonop	noncur	asset	liab	prop
Savings Bank Deposits	rev	inc	exp	nonop	noncur	asset	liab	prop
Sales Returns & Allowances	rev	inc	exp	nonop	noncur	asset	liab	prop
Unearned Fees	rev	inc	exp	nonop	noncur	asset	liab	prop

The first 7 answers are based on the following

FAIRFILED FARM, BANK RECONCILIATION

DIRECTIONS: A useful bank reconciliation form is illustrated below. When this form is used properly, the corrected bank statement balance will agree with the corrected cash account balance, the amount of each being the CORRECT cash balance.

RECONCILIATION

Balance as shown by the cash account			xxxxx	Balance as shown on the Bank Statement			xxxxx
Plus Type 1 items.....	xxx			Plus Type 3 items.....	xxx		
	xx	+	xxx		xx	+	xxx
			xxxxx				xxxxx
Minus Type 2 items....	xx			Minus Type 4 items....	xxx		
	x				xx		
	xxx	—	xxx		xxx	—	xxx
Corrected Cash Acct. Balance			xxxxx	Corrected Bank Statement Bal.			xxxxx

The following items may need to be considered in reconciling the book and bank statement figures as of August 31, for Fairfield Farm. If an item affects the August reconciliation, classify it as Type 1, 2, 3, or 4 in accordance with the bank reconciliation form above by making a black mark in the proper space on the separate answer sheet. (Use 5 if there is no effect on the reconciliation.)

1. Firm checks which had not cleared by August 31 amounted to $457.
   Type: 1 2 3 4

2. A customer's check which was deposited on August 19, was refused by his bank for insufficient funds. Though notified at the time, the manager forgot to tell the Fairfield bookkeeper.
   Type: 1 2 3 4

3. The Farm deposited the August 31 cash receipts of $4,350 in the bank's night deposit slot after business hours so that the bank was unable to enter the credit until September.
   Type: 1 2 3 4

4. As an accomodation, Fairfield Farm cashed a salesman's personal check from its petty cash. On August 29, this check was cashed and the proceeds returned to the fund.
   Type: 1 2 3 4

5. Check Number 988 for $898 had been incorrectly entered on the books as $998.
   Type: 1 2 3 4

6. The bank had recorded the Farm's deposit on August 10, as $332.00 and had reported this on our statement. Our deposit receipt showed the true amount of $3,322.
   Type: 1 2 3 4

7. The bank sent the firm a debit memorandum for a savings bond purchase which Fairfield authorized it to make whenever its month-end balance exceeds $1,000.
   Type: 1 2 3 4

(8 - 13, "BAD DEBTS")

Here are several pairs of statements which are related in some way to accounting for Bad Debts. Your answers pertain to the pair of statements.

Mark answer:
(1), if both a and b parts of the pair are true.
(2), if both a and b parts are false.
(3), if a is true and b is false.
(4), if a is false and b is true.

8. a. "Bad Debts" refers to liabilities of the entity on which the discount period has expired.

b. "Allowance for Bad Debts" is correct when its balance can be described as "Estimated Overstatement of the Accounts Payable balance."

9. a. "Bad Debts" is credited when "Loss on Doubtful Accounts" is debited.

b. "Loss on Doubtful Accounts" is a correct alternative for the temporary proprietorship title, "Bad Debts."

10. a. The information that ½% of the $100,000 of credit sales in 1970 is unlikely to be collected is an estimate that the December 31, 1970 balance sheet should include a $500 contra-asset balance.

b. In the ledger of a company which makes provision for uncollectible accounts:
"Total Assets" (on the Balance Sheet) = "The sum of the debit balances in asset accounts."

11. a. A company which provides for uncollectible customer accounts will never change the balance of Accounts Receivable without also changing "net Accounts Receivable."

b. $500 estimated as ½% of $100 thousand dollars in credit sales is a correct debit to temporary proprietorship while the amount to be subtracted from Accounts Receivable on the balance sheet is probably different.

12. a. The information that the allowance against $50,000 in Accounts Receivable should be 3% implies that $1,500 should be debited to expense in adjusting the books.

b. "Bad Debts" is a title synonymous with "Bad Debts Payable."

13. a. Collecting an account which had been written off as uncollectible indicates that "total current assets" has been understated. The correction increases the total.

b. Collecting an account which had been written off as uncollectible indicates that Bad Debts Expense, or another Income Statement account, should be credited.

Before attempting to answer questions on the following ILLUSTRATION and the general topic of imprest funds, you should probably summarize the petty cash activity for February in some way.

For your convenience, some T-accounts are provided on this page. However, ONLY YOUR RESPONSES TO THE QUESTIONS (next page) WILL BE GRADED.

Petty Cash Book

Receipts		Date	Explanation	Total Disbursements	Disbursements						FUND Balance
Date	Amount				Office Expenses	Store Expenses	Postage	Delivery Expense	General Amount	General Account	
eb. 3	40.00		(establish)								40.00
		Feb. 6	News boy-Star	1.15	1.15						38.85
		10	Parcel service	12.50				12.50			26.35
		10	Misc.	11.25	4.00	7.25					15.10
13	84.90		Reimburse and increase fund		5.15	7.25		12.50			100.00
		14	personal	20.00					20.-	mia farrow, Drawing	80.00
		23	Freight on ret.	18.00					18.-	Accts. Payable	62.00
28	13.00	28	Reimburse, but reduce fund								75.00
	137.90			62.90	—	—	—	—	38.-		
ar. 1	75.00										75.00

14 - 17, "PETTY CASH")

ON YOUR ANSWER SHEET:

Mark EVERY alternative with which you agree. It may be correct to make all or none or any combination of the alternative ways the statement has been completed. A bonus is given when no mistake is made on any part of an item.

14. The record illustrated on the prior page

1. is a memorandum record.
2. is sometimes known as a bank reconciliation.
3. is a general ledger (or part of one).
4. is NOT a formal financial statement.
5. is NOT a record of original entry, but is used before that record is used.

15. The events shown in the petty cash book

1. eventually result in an increase in recorded current assets.
2. called for writing exactly three checks.
3. result, when posted, in a decrease in recorded current assets.
4. result in one or more contingent liabilities.
5. affect only expense accounts.

16. The petty cash account, if the Farrow firm posts daily,

1. had one debit and one credit on February 8.
2. contained two debits and one credit on March 1.
3. had two debits and NO credits by February 14, and still did on the 15th.
4. had NO balance less than $40 after February 3.
5. had a balance of $15.10 (debit) February 12 and a $62 debit balance on February 25.

17. When they have been properly accounted for, the events in the illustration

1. will decrease temporary proprietorship in three accounts.
2. will NOT affect the credit column of a trial balance.
3. will have NO recorded effect on the working capital* amount prior to Feb. 10.
4. will decrease the owner's equity total more than they decrease net income.
5. will decrease total assets, $62.90, total liabilities by $18, and total proprietorship, $44 90 while increasing total expense $24.90 and disinvestment, $20.

*(current assets minus current liabilities)

NAME ______________________ BD-1

Several proper adjustments were made before the trial balance given (after 1) was taken from the Welsch Co. ledger.

1. Enter the balances in appropriate sections of the T-account ledger (use abbreviations given). Verify by completing the summaries on each page.

October 31, 1970

Accounts Receivable (A/Rec.)	600	
Accrued Wages (Accr. Wages)		4
Advertising (Adv.)	7	
Allowance for Bad Debts (Allow. for B. Debts)		8
Balances Due Creditors (Bals. Due Crs.)		72
Cash	3	
Current Insurance Costs (Curr. Ins. Costs)	1	
Deferred Income - Service Contracts (Def. Inc.-Serv. Contr.)		2
Freight on Purchases (Frt. on Purch.)	2	
Lease payment -Store (Lease paym.-St.)	3	
Merchandise on Hand (Mdse. o. h.)	20	
Miscellaneous Expense (Misc. Exp.)	12	
Prepaid Insurance (ppd. Ins.)	4	
Purchases (Purch.)	940	
Purchases Discounts (Purch. Disc.)		1
Racquel Welsch, Capital (R.W., Cap.)		192
Sales		1400
Sales Returns and Allowances (Sales R. and A.)	5	
Service Income Earned (S. Inc. Earned)		8
Wages	90	
	1687	1687

2. Additional adjustment data:

   a. The value of the inventory of merchandise by count is $5.

   b. From reviewing outstanding accounts with customers:

      I. You are asked to write off accounts with M. Breck and P. Gold - $2 each.

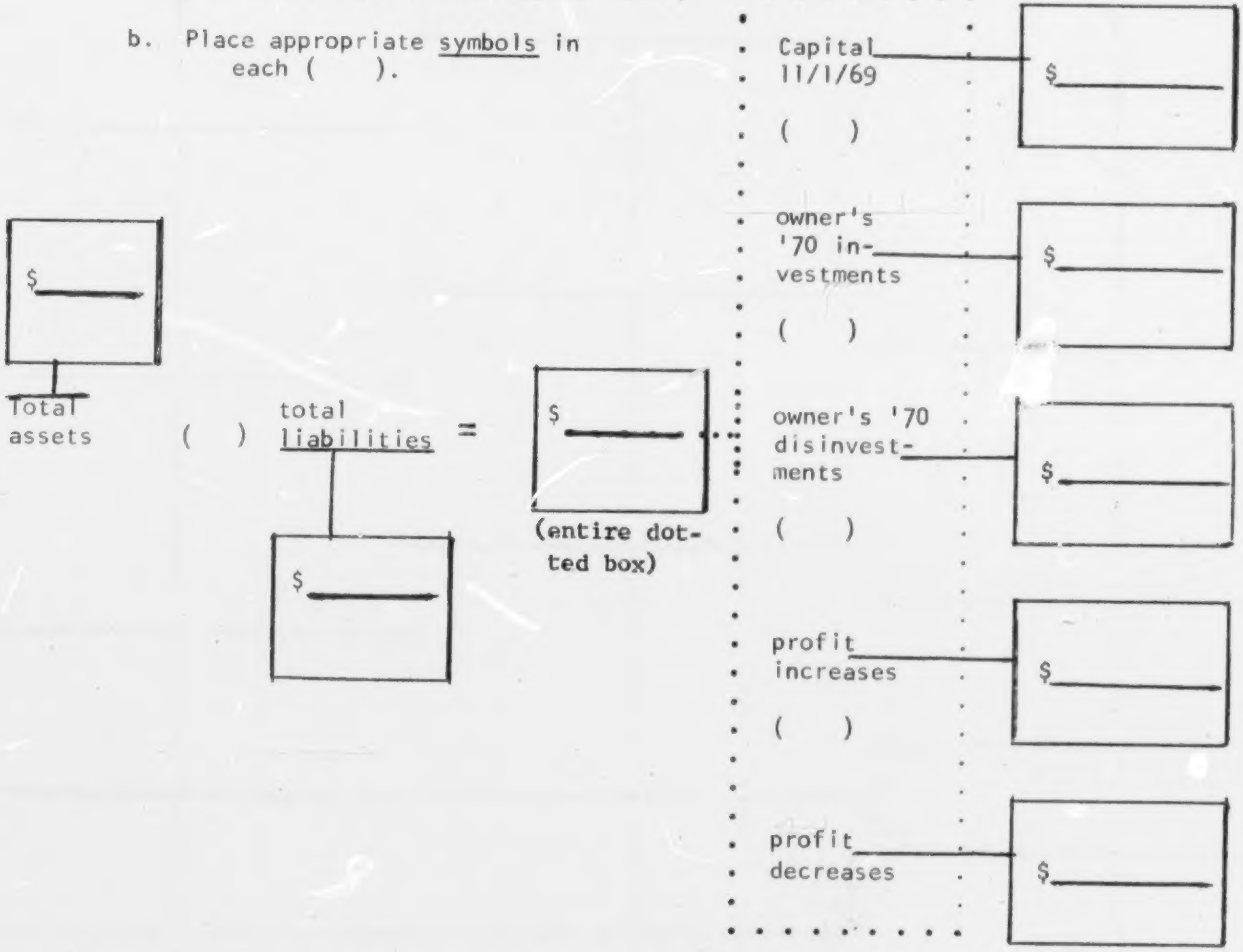
      II. AFTER the write-offs, the provision for proper valuation is estimated to be 2% of Accounts Receivable outstanding.

Add all entries called for by information in a and b. (KEY with a and with I and II for b.)

3. Journalize and post end-of-period closing entries.

4. a. After completing all prior instructions (thru 3), summarize you after-closing ledger by writing ONE dollar-amount per box in the following equation. (Include $ zeros, when appropriate.)

b. Place appropriate symbols in each ( ).



$
Total assets
( )
total liabilities
$
=
$
(entire dotted box)
Capital 11/1/69
( )
$
owner's '70 investments
( )
$
owner's '70 disinvestments
( )
$
profit increases
( )
$
profit decreases
$

5. Show how net Accounts Receivable will be reported on an October 31, Balance Sheet.

6. The first transaction of the new period (November 1) is a recovery of $8 from customer, Carl Yastrzemski, whose account had previously been written off.

On the last page, prepare a formal Welsch Co. Balance Sheet for the moment following this transaction. (Hint: Record the recovery in accounts, then work from ledger.)

A S S E T S :

(1

(2

(3

(4

(

(6

(7

(8

(9

(10

(1

L I A B I L I T I E S :

(12

(1

(31

(3

(33

(34

(35

(36

(37

SUMMARY:
total assets = $__________
total liabs. = $__________

net asset amt.
from this page $__________

INCOME
or REVENUE:

(52

53)

(91

(92

54)

(93

XPENSE accounts:

(94

(96

(97

(98

(99

ERMANENT:

71)

73)

(74

RM. proprietorship
amount $__________
MP. proprietorship
ombined increase . $__________
OR
ombined decrease. .$(__________)

t asset amt.
rom this page. . . $__________

(75

Name________________________________ CBM-III

Flash Gordon holds a 90-day, 5% note for $9000, dated June 14 that he has received from a customer on account. On July 14 he discounts the note at his bank at the rate of 4%.

(a) What is the maturity value of the note? $____________________

(b) How many days are there in the discount period?______________

(c) What is the amount of the discount? $________________

(d) What is the amount of the proceeds? $____________________

(e) Gordon needed only $8000 for the 60-day period during which he used the proceeds of the customer's note. He could have acquired this amount by giving his own 5% note.

I. Is his dollar sacrifice greater or smaller under his chosen method of borrowing or under this option? How much?

II. In which case is his effective cost of borrowing (the actual amounts, not merely the $8000 he needed) most favorable to him? Demonstrate.

(f) Give transaction analyses (next page) for the following:

1. Default by the maker of the note. Protest fee, $5. A separate account showed the contingent liability.

2. Write-off of the account created in 1 when, 6 months later, it is determined that the account is uncollectible.

Step 1. (Circle a,b or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its

Step 2.

Step 3.

MORE ▽	or	LESS ▽
$______		$______
$______		$______
$______		$______

ZERO___(✓)
$+______OR
$-______

____
____
____

Step 4.

____
____
____

Step 5.

MORE ▽	or	LESS ▽
$______		$______
$______		$______
$______		$______

ZERO___(✓)
$+______OR
$-______

Step 6.

Step 7. If not zero, show account and amount. ZERO ____(✓)

expense ______________________________ $______

investment ______________________________ $______

disinvestment ______________________________ $______

income ______________________________ $______

revenue ______________________________ $______

Step 1. (Circle a,b, or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OW

Step 2.

Step 3.

MORE ▽	or	LESS ▽
$______		$______
$______		$______
$______		$______

ZERO___(✓)
$+______OR
$-______

____
____
____

Step 4.

____
____
____

Step 5.

MORE ▽	or	LESS ▽
$______		$______
$______		$______
$______		$______

ZERO___(✓)
$+______OR
$-______

Step 6.

Step 7. If not zero, show account and amount. ZERO ____(✓)

expense ______________________________ $______

investment ______________________________ $______

disinvestment ______________________________ $______

income ______________________________ $______

revenue ______________________________ $______

Step 1. (Circle a, b or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OW

Step 2.

Step 3.

MORE ▽	or	LESS ▽
$______		$______
$______		$______
$______		$______

ZERO___(✓)
$+______OR
$-______

____
____
____

Step 4.

____
____
____

Step 5.

MORE ▽	or	LESS ▽
$______		$______
$______		$______
$______		$______

ZERO___(✓)
$+______OR
$-______

Step 6.

Step 7. If not zero, show account and amount. ZERO ____(✓)

expense ______________________________ $______

investment ______________________________ $______

disinvestment ______________________________ $______

income ______________________________ $______

revenue ______________________________ $______

NAME________________________

PC-IV

In addition to the activity reflected in the record which follows, the Grace Corporation reimbursed its imprest fund on November 30 (without further expenditure).

1. Journalize all of its transactions for November.
2. Set up the necessary accounts in the segregated ledger and post all your entries--DATE EACH ONE.

PETTY CASH RECORD

DATE		EXPLANATION	VCHR. NO.	RECEIPTS	PAYMENTS	DISTRIBUTION OF PAYMENTS			
						FREIGHT-IN	MISC. GEN. EXP.	SUNDRIES	
								ACCOUNT	AMOUNT
19-- Nov.	3	Estab. fund (Ch.No.32)		25 00					
	9	Express on purchase	1		6 50	6 50			
	12	Cleaning office	2		5 00		5 00		
	15	Paper clips	3		2 25			Supplies Used	2 25
	18	Postage on sale	4		2 00			Freight Out	2 00
	23	Newspaper	5		1 25		1 25		
	23	Totals		(17 00)	17 00	6 50	6 25		4 25
		On hand			8 00				
					25 00				
	23	Reimburse & increase							
		fund to $40 (ch. no. 51)		32 00					
	29	Refund to customer			10 00			Sales rets.	10 00

PAGE 8

Page 9

ASSETS:

(assign contra accounts to section for related class)

(11) Accumulated Depr.--Machines

		Bal.	1250
		(q)	500

(12) Cash

(13)

(14)

(15)

(16)

LIABILITIES:

(21)

(22)

PERMANENT OWNER'S EQUITY

(31)

(32)

INCOME or REVENUE:

(41)

(42)

(43)

(44)

(45)

(46)

EXPENSE:

(51) Depreciation--Machines

(q)	500		

(52)

(53)

(54)

(55)

(56)

A bank statement from the Continental Bank covering the account of Joe Namath for the month of October shows a balance at October 27 of $790.50. The Cash in Bank account in Namath's ledger has a debit balance of $129.82.

A deposit of $300.00 was made on October 29.

The following checks have not been returned by the bank:

From the previous reconciliation, No. 102 for $25.00.
Written during October:

No. 111	$700.00
No. 121	94.25
No. 124	82.30
No. 125	101.84

The items returned with the bank statement included:

(1) an unnumbered check for $25.00 written to secure an option on a piece of real estate which was not entered in the journal;
(2) a debit memo for $3.71 for bank service charges;
(3) a debit memo for October interest on an 8%, $600 promissory note; and
(4) a debit memo of $10.00 for safety deposit box rental for the next year.

1st prepare:
(a) a bank reconciliation statement, and
(b) one or more transaction analyses which, when journalized and posted, will correct the book balance, completely.
2nd, Demonstrate appearance of the Cash account when your (b) changes are in it.

Cash

Bal. 129.82	

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A = $____________ − +
CHANGE in L = $____________ − +
CHANGE in P
TEMP. = $____________ − +
PERM. = $____________ − +

(circle appropriate change)

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change: ______________________________ $________ − +

……

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A = $____________ − +
CHANGE in L = $____________ − +
CHANGE in P
TEMP. = $____________ − +
PERM. = $____________ − +

(circle appropriate change)

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change: ______________________________ $________ − +

……

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A = $____________ − +
CHANGE in L = $____________ − +
CHANGE in P
TEMP. = $____________ − +
PERM. = $____________ − +

(circle appropriate change)

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change: ______________________________ $________ − +

……

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A = $____________ − +
CHANGE in L = $____________ − +
CHANGE in P
TEMP. = $____________ − +
PERM. = $____________ − +

(circle appropriate change)

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change(s)
______________________________ $________ − +
______________________________ $________ − +

Schedule of A L P change: ______________________________ $________ − +

Name ______________________ BD-III

1. Five adjustments (a through e) have been made in the ledger on page 3. Use the letter which keys a debit to its credit to identify the reason it is needed in the following list.

________ to add the cost of employee services not yet paid for to the current operating expenses.

________ to bring the combined book value of Building, Office Equipment and Delivery Truck to $18,300.

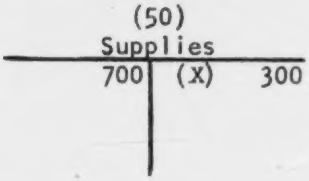
________ we paid a bill from the supplier of truck fuel which was $200 too large. Rather than receive a refund, the next bill will give us credit for the $200.

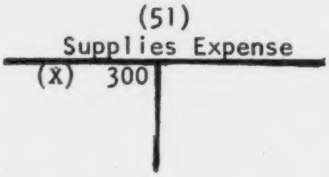
________ past-due rent for unneeded space in our building, $200.

________ to defer the income from commissions collected in advance.

2. Indicate how these adjustments change the information in the accounting model at the top of page 2.

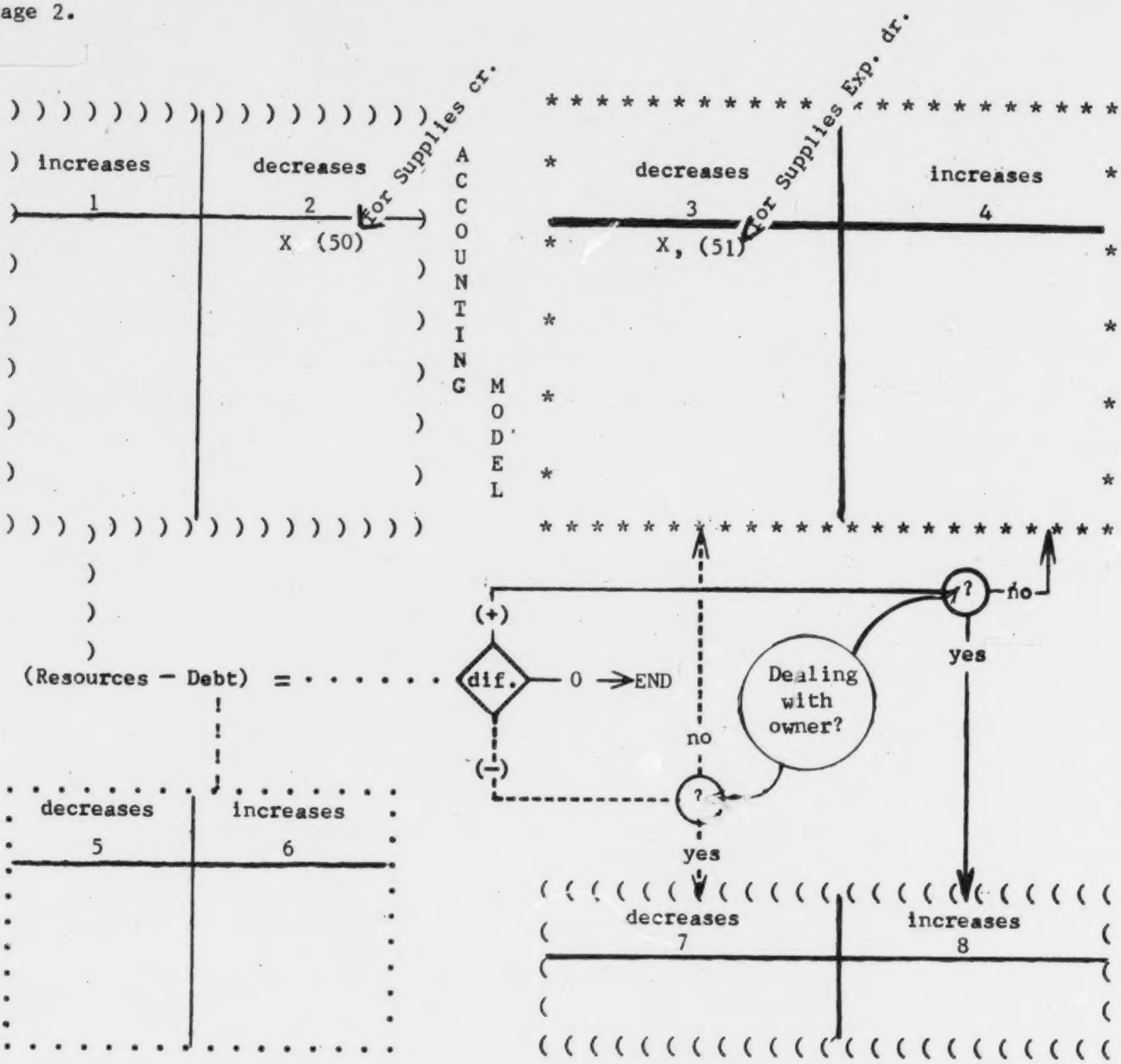
For example, if the ledger included this adjustment (X) for supplies used during the period,





the effect of crediting Supplies, as shown in section 2 of this model of accounting relationships, is to decrease assets. One possible effect when analysis follows the dashed path to the end of the "no" branch, is an expense debit. Hence the "X, (51)" in section 3.

You indicate both effects of adjustments a through e, by placing the letter and the account number in the appropriate box.


For Supplies cr.
For Supplies Exp. dr.
increases
decreases
1
2
X (50)
ACCOUNTING MODEL
decreases
increases
3
4
X, (51)
(+)
(Resources – Debt) =
dif.
0 →END
(–)
?
no
yes
Dealing with owner?
?
no
yes
decreases
increases
5
6
decreases
increases
7
8

3. In a similar fashion, show the effects of adjusting for the following:

(f) 90% of present customer accounts are estimated to be collectible.

Also record (key with f) the debit and credit in the ledger.

(1)

Cash

7000	

(2)

Office Equipment

4000	

(3)

Accumulated Depr.

	2000
	(e) 200

(4)

Willie Mays, Capital

6000	37550
	1000

(5)

Accounts Receivable

22000	

(6)

Delivery Truck

3500	

(7)

Notes Payable

	6000

(8)

Insurance Expense

530	

(9)

Advance Payments to Suppliers

500	

(10)

Commissions

(b) 200	12500

(11)

Due to Tax Authorities

	250

(12)

Depreciation of Plant & Equip.

(e) 200	

(13)

Building

13000	

(14)

Rental Income

	3200
	(a) 200

(15)

Wages

4170	
(c) 200	

(16)

Legal Fees

800	

(17)

Gas, Oil and Maint.

1050	(d) 200

(18)

Interest Expenses

100	

(19)

Miscellaneous Expenses

150	

(20)

Bad Debt Losses

(21)

Accrued Rental Income

(a) 200	

(22)

Allow. for Bad Debts

	200

(23)

Deferred Expense of Truck Operation

(d) 200	

(24)

Unearned Commissions

	(b) 200

(25)

Wages Payable

	(c) 200

4. The ledger, after including adjustment f, permits you to prepare correct financial statements for the W. Mays Co.

   a. write the name of each outline statement (next page) beside its number.

      1. ______________________________________

      2. ______________________________________

      3. ______________________________________

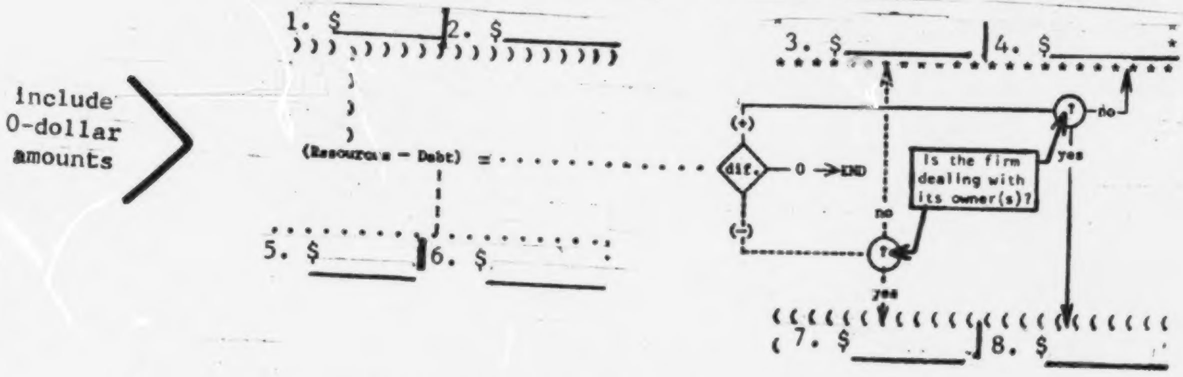
   b. Indicate which accounts are needed to prepare each statement. **Write the number of every account in all of the statement categories to which it contributes information.** As examples, the 1 in Current Assets is for Cash; and the number of the Office Equipment T-account (2) has been entered in the non-current asset section.

   c. Where one statement includes an amount from another statement, use the letter identifying the amount in the first statement as you use account numbers in the other boxes.

5. Refer back to the model (p. 2). Think of each account being located in the lettered section for the change it normally records most. (Cash, and other assets for example, "belong" to location 1 because larger debit amounts than credit amounts are made to them.) In other words, an account "belongs" where its normal balance is increased.

   Closing the books condenses ledger information into fewer balances.

   Assume you have already closed. What $-TOTAL of the AFTER-closing balances would you compute for the accounts belonging to each section?



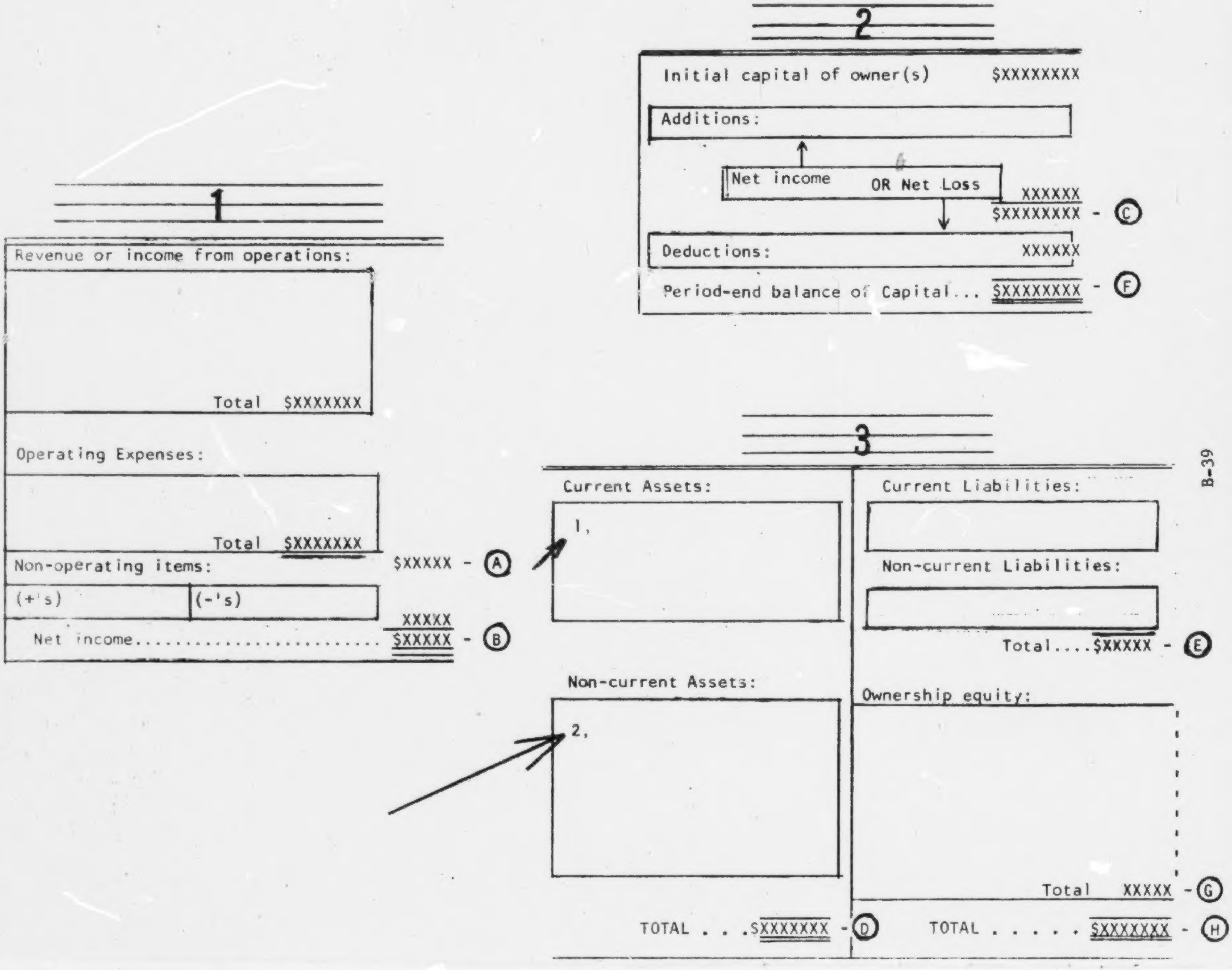
6. In the new period (after closing), the following events occurred.

   g. Wilmer Cook's estate paid us $50, part of the account he had owed us. We had written it off several months ago.

   h. We write off the uncollectible account of Hector Protector - $200 we never expect to see.

   Record these events in the ledger. Key with g. and h.
   How different (from 5) are your $-totals after g and h? Indicate any change.

(section)	(amount)	(Increase/decrease)
________	$____________	______________
________	$____________	______________
________	$____________	______________


1
Revenue or income from operations:
Total $XXXXXXX
Operating Expenses:
Total $XXXXXXX
Non-operating items:
$XXXXX - Ⓐ
(+'s)
(-'s)
XXXXX
Net income........................ $XXXXX - Ⓑ
2
Initial capital of owner(s) $XXXXXXXX
Additions:
Net income OR Net Loss
XXXXXX
$XXXXXXXX - Ⓒ
Deductions: XXXXXX
Period-end balance of Capital... $XXXXXXXX - Ⓕ
3
Current Assets:
1,
Non-current Assets:
2,
TOTAL . . .$XXXXXXX - Ⓓ
Current Liabilities:
Non-current Liabilities:
Total....$XXXXX - Ⓔ
Ownership equity:
Total XXXXX - Ⓖ
TOTAL . . . . . $XXXXXXX - Ⓗ

Section____ NAME______________________ BD-V

The ledger balances of P. Wylie Co. after all adjustments, except those for Bad Debts and Cost of Goods Sold, are presented below.

P. Wylie Co.
December 31, 1970

(1)	Accounts Receivable	$15,000			
(2)	Accrued Expenses		$ 60		
(3)	Accumulated Depreciation - St. Eq.		845		
(4)	Advertising	110			
(5)	Allowance for Bad Debts		350		
(6)	Cash	240			
(7)	COST OF GOODS SOLD				
(8)	Deferred service revenue		75		
(9)	Depreciation	125			
(10)	Freight In	12			
(11)	Insurance Expense	75			
(12)	Income from Rents		20		
(13)	Merchandise Inventory	~~1,690~~		1942.00	
(14)	Deferred Insurance Payments	15			
(15)	Purchases	25,240			
(16)	P. Wylie, Capital		12,915		
(17)	Sales		43,000		
(18)	Sales Returns	140			
(19)	Service Revenue		925		
(20)	Store Equipment	12,500			
(21)	Store Salaries	3,360			
(22)	Unpaid Trade Accounts		317		
		$58,507	$58,507		

Requirement 1: The correct December 31 inventory of merchandise is $1942, and the adjustment should change the balance of Merchandise Inventory to a debit of that amount, as shown in the debit box beside it.

a. Fill the appropriate Cost of Goods Sold box with the balance to which it should be adjusted.

b. Strike out the balances which must be cancelled as part of the adjustment.

Requirement 2: In the accounting model **(opposite page 2)** are a few T-accounts. Write titles and enter any balance from above for these accounts. (CHOOSE AN APPROPRIATE LOCATION.)

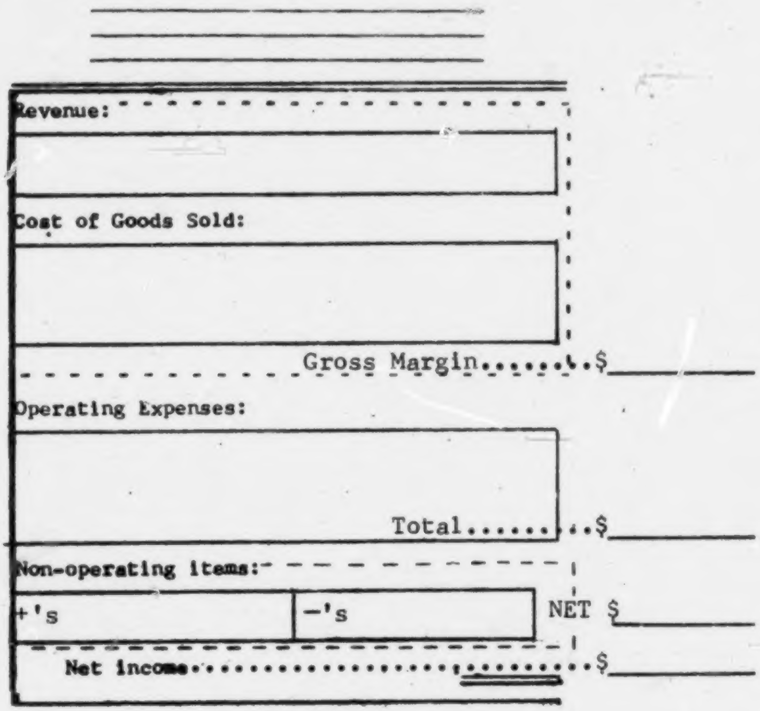
Accounts Receivable
Accrued Expenses
Allowance for Bad Debts
(23) Loss on Credit Extended

P. Wylie, Capital
Sales
Sales Returns

Requirement 3: Assign, by identifying number, all other accounts from your (revised) trial balance to an appropriate box of the model.

Requirement 4: Adjust appropriate model T-accounts for the following: Estimate: 4% of presently-uncollected customer accounts are not expected to be collected.

Requirement 5: Give the letters of the model boxes which contain the accounts for this outline statement.


Revenue:
Cost of Goods Sold:
Gross Margin........$
Operating Expenses:
Total........$
Non-operating items:
+'s
−'s
NET $
Net income..............................$

a. Accounts contained in model boxes ________________.

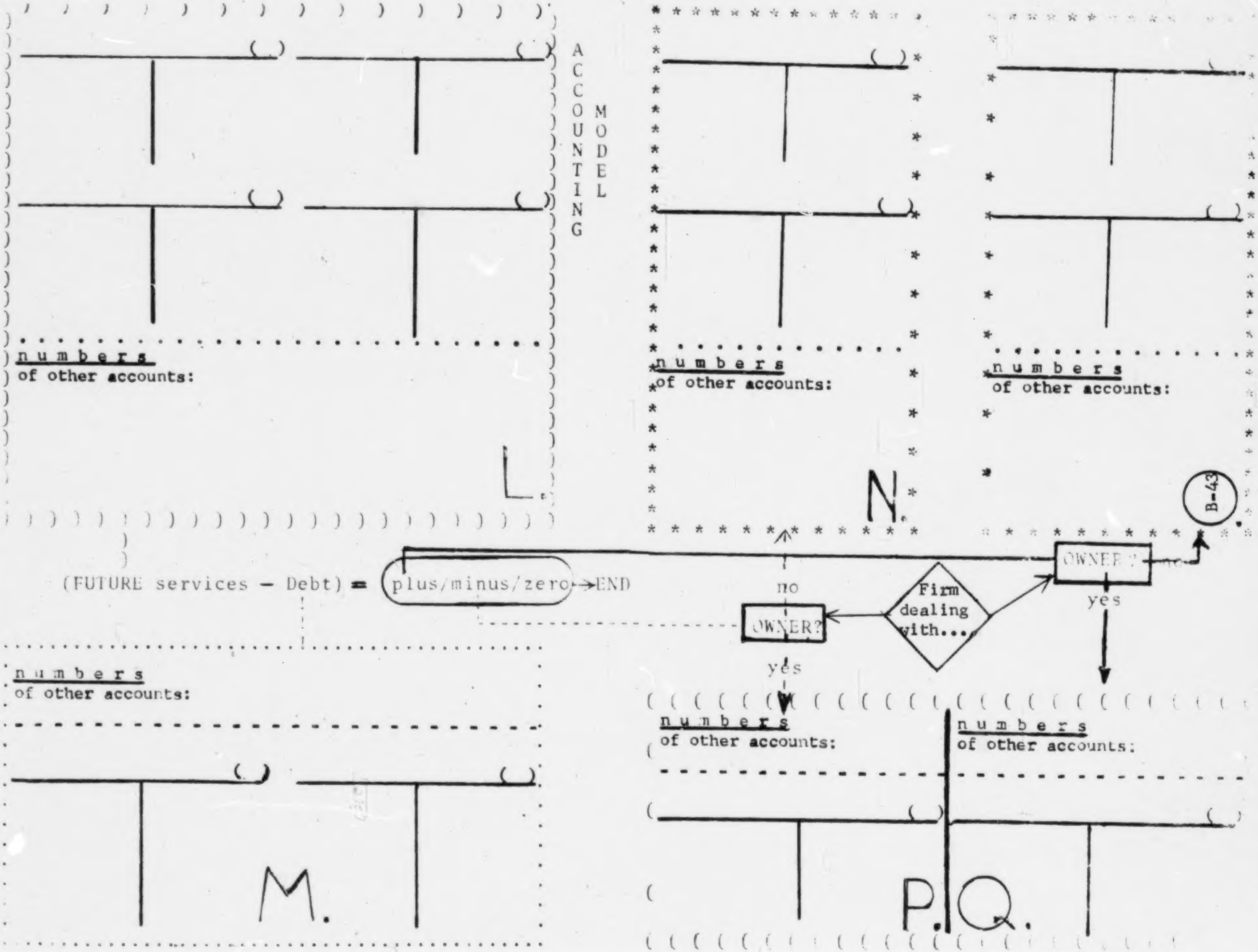
b. Assign account numbers (including T-accounts) to boxes for the five statement categories.

c. Use the trial balance and model data to compute (and show) the $-amounts for gross margin and the 3 other blanks.

Requirement 6: What will the Balance Sheet show for "Net Accounts Receivable"?

$____________

(Continued on page 4)


ACCOUNTING MODEL
numbers of other accounts:
L.
numbers of other accounts:
N.
numbers of other accounts:
B-43
(FUTURE services - Debt) = plus/minus/zero→END
Firm dealing with...
OWNER?
no
yes
OWNER?
no
yes
numbers of other accounts:
M.
numbers of other accounts:
numbers of other accounts:
P.
Q.

4.

Requirement 7: In writing-off accounts:

I. a debit is made to ______________________, which
(acct. title)

_____ (✓) decreases profit by increasing expense

_____ (✓) increases assets by decreasing a contra-asset

_____ (✓) reduces a liability

____
(If none of the above are true, you write it.)

II. a credit, to ______________________,
(acct. title)

_____ (✓) increases profit

_____ (✓) decreases assets

_____ (✓) increases a liability

____
(or you write it.)

III. TOGETHER, the debit and credit (complete the appropriate one or (✓) c.)

a. increase "net Accounts Receivable" and ______________________________.

b. decrease "net Accounts Receivable" and ______________________________.

c. _____ (✓) leave "net Accounts Receivable" unchanged.

BD-VI

NAME ________________________________

On the next page are several accounts of merchant.

1. As they stand, what is the amount of net accounts receivable?

   $______________

2. In the form at the bottom of the next page, give the analysis for each of the following. (Read the columns' headings and instructions for using the forms very carefully.)

   a. It is decided that the $10 account of Herbert Hoover must be written off as uncollectible.

   b. At the end of the year the accounts are adjusted to reflect the estimate that 1% of the $5000 of net sales were to customers whose accounts will eventually prove uncollectible.

   c. The company receives $20 from a customer whose account has earlier been written off as uncollectible.

3. Use the T-accounts, NOT THE ANALYSIS FORM, to answer this new problem.

   Enter, directly in the accounts, the adjustment the firm needs if, after aging its receivables, it concludes that $60 of the customer accounts must eventually be written off.

(BASE YOUR ANSWER ON THE ACCOUNTS, AS SHOWN. IGNORE ANY EFFECT THAT ANALYSES YOU MADE ABOVE WOULD HAVE ON THEM.)

ACCOUNTS RECEIVABLE	
3,000	

SALES	
	5,200

SALES RETURNS	
200	

BAD DEBT LOSSES	

ALLOWANCE FOR BAD DEBTS	
	15

Column SUB-headings (expense, incom etc.) only identify class of accour used. + or − blanks refer to chang in the owner's equity TOTAL (P), regardless of whether the account balance becomes larger or smaller.

Identify first line of each transaction.
****

	ACCOUNT TITLES	Asset change	Liab. change	CHANGE in Owner's equity			
				expense	income	revenue	OTHER
2a		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −
		+ −	+ −	+ −	+ −	+ −	+ −

Section CBM-1

Name ______________________

A. Prepare transaction analyses for the following.

Nov. 16 Received from Thomas Lane in provisional settlement of his account a $5,000, 60-day, 6% note dated November 16.

Dec. 31a. Made an adjusting entry for accrued interest on the note of November 16.

Dec. 31b. Closed the temporary account in your adjustment. The only entry in this account originated from the above adjustment.

January 8 Discounted, at 6%, with the Farmers' Bank a customer's 90-day non-interest-bearing note for $89. The note was dated Dec. 9. (Use a contra-asset account.)

Jan. 15 Collected the note and interest from Lane.

Farmers' Bank acknowledges receipt of maker's remittance at the maturity of the note discounted on Jan. 8. (Date your analyses.)

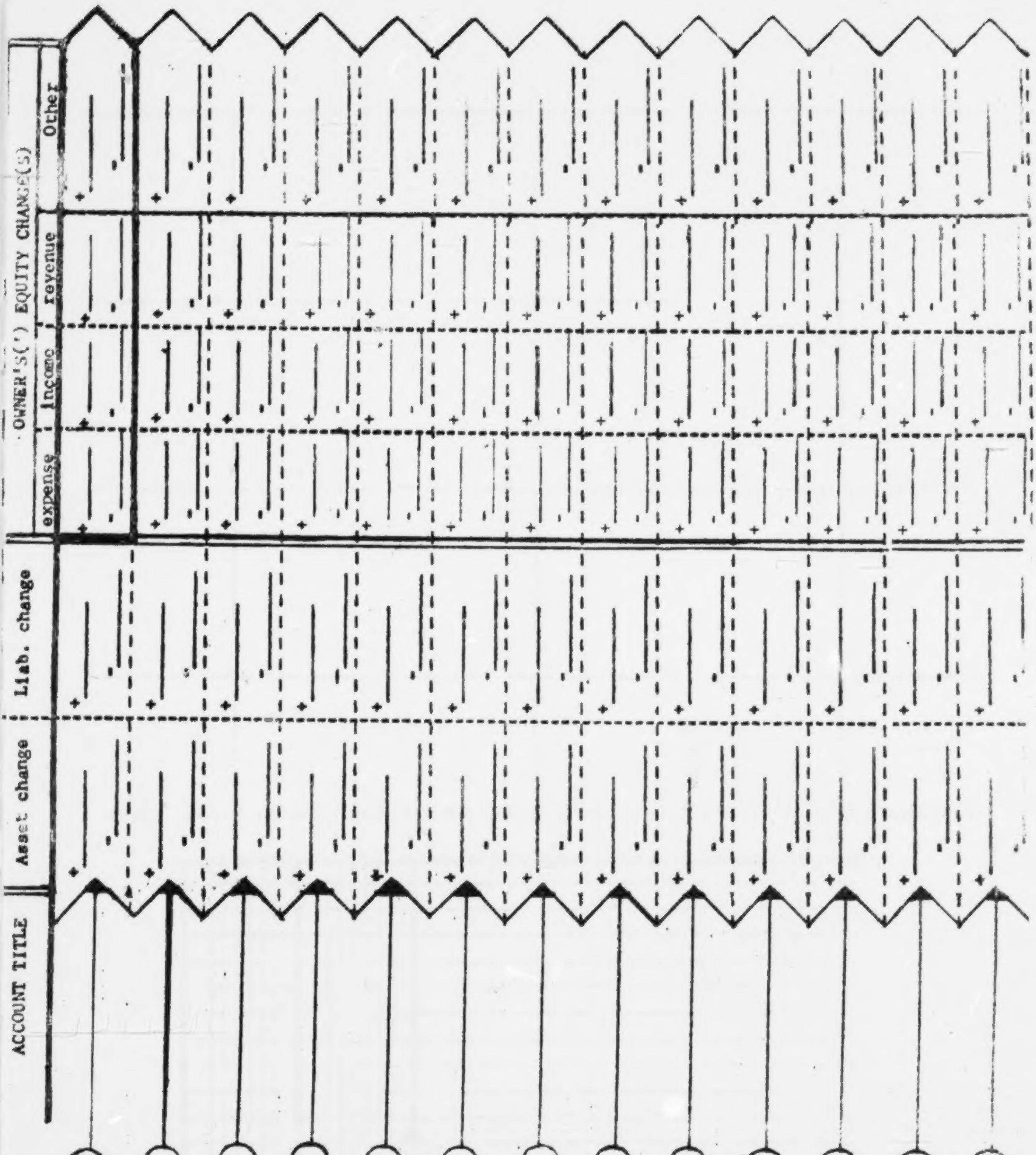
B. Set up a calculation from which the effective annual rate of interest can be determined for the note discounted on January 8. Don't bother to compute.

Will the rate be more or less than 6%? ______________

effective annual rate:

DATES:	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)				
				expense	Income	revenue	Other	
11/16		+ -	+ -	+ -	+ -	+ -	+ -	Change in NET assets, NOT in acct balance.
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	
		+ -	+ -	+ -	+ -	+ -	+ -	

over


ACCOUNT TITLE
Asset change
Liab. change
OWNER'S(') EQUITY CHANGE(S)
expense
income
revenue
Other

C. Record the debits and credits. Key by date.

D. Prepare a trial balance of the net effects your work has produced in the ledger.

CBM-V

Notes Receivable	
700 6000 1200	

(1) Using Notes Receivable Discounted as one account, place entries in the appropriate accounts (KEY THEM) to record the discounting of the above $6000 Note Receivable. Its terms are 6%, 120 days; its date October 15. The discount rate is 9%; the discount period 100 days.

(2) What is the date of discount?______________________.

(3) Insert an appropriate report of notes receivable between the two balances on the part of a Balance Sheet shown below (for December 31). Complete the section.

Cash			$ 2100	
Merchandise Inventory			42700	
Total ______________________ assets (?)				$

(4) What is the amount of the discount? $______________.

(5) What is the note's maturity value? $______________.

(6) What is the effective annual rate of interest which the bank charged? (set up a calculation; you need not work it out.)

(over, please)

(7) IF the note in question had not been discounted, an adjustment would have been needed on December 31 for the 77 days since October 15.

(underline) a. The adjustment records accrued interest / deferred interest.

b. Complete an analysis in the following form which is appropriate for this December 31 adjustment:

Which assets change? MORE or LESS
$_____ $_____
$_____ $_____
$_____ $_____

Which liabilities change? MORE or LESS
$_____ $_____
$_____ $_____
$_____ $_____

From ALL of Step 3:
ZERO___(✓) $+_____ OR $-_____ change in A → MINUS → change in L

From ALL of Step 5:
ZERO___(✓) $+_____ OR $-_____

DIFFERENCE

Change in P is: ZERO___(✓) Plus $__________ Minus $__________

(IF NOT ZERO, enter account title in the appropriate blank below.)

OWNER'S disinvestment __________ expense __________ income __________

OWNER'S investment __________

(8) Since the note has really been discounted, the maker will either pay the bank at maturity or he will dishonor it. Give an analysis for the internal transaction which is needed IN EITHER CASE. (Do not include the additional effect which a dishonor would require.)

Which assets change? MORE or LESS
$_____ $_____
$_____ $_____
$_____ $_____

Which liabilities change? MORE or LESS
$_____ $_____
$_____ $_____
$_____ $_____

From ALL of Step 3:
ZERO___(✓) $+_____ OR $-_____ change in A → MINUS → change in L

From ALL of Step 5:
ZERO___(✓) $+_____ OR $-_____

DIFFERENCE

Change in P is: ZERO___ Plus $__________ Minus $__________

(IF NOT ZERO, enter account title in the appropriate blank below.)

OWNER's disinvestment __________ expense __________ income __________

OWNER's investment __________

SYMBOLS USED: A= total assets
L= total liabilities
P= total proprietorship*
PERM. = permanent
TEMP. = temporary

*= owner's equity, net worth, or any net asset synonym.

P.C. II

NAME ______________________

1. ON THE FORMS BELOW, prepare analyses which correspond to correct journal entries for the following transactions related to an imprest petty cash fund. Date each analysis you make.

May 1 Established a $100 petty cash fund.

May 31 Reimbursed the fund for payments made from it, as follows:

May 5	Equipment purchased	$ 8.00		
May 8 & 13	Freight on purchases paid	12.53,	5.00	
May 20	Utility bill for electricity	12.02		
May 10,25,30	Miscellaneous other expenses paid	9.40,	7.50,	15.50

Show Petty Cash account after complete posting of the journal at the end of May. Date any dr. or cr. with date journal would show.

Petty Cash

DATE ______

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A =$__________ − +
CHANGE in L =$__________ − +
CHANGE in P
TEMP. = $__________ − +
PERM. = $__________ − +

(circle appropriate change)

Schedule of A L P change(s)			Schedule of A L P change(s)		
______________	$______	− +	______________	$______	− +
______________	$______	− +	______________	$______	− +
______________	$______	− +	______________	$______	− +
______________	$______	− +	______________	$______	− +

Schedule of A L P change: ______________________ $__________ − +

DATE ______

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A =$__________ − +
CHANGE in L =$__________ − +
CHANGE in P
TEMP. = $__________ − +
PERM. = $__________ − +

(circle appropriate change)

Schedule of A L P change(s)			Schedule of A L P change(s)		
______________	$______	− +	______________	$______	− +
______________	$______	− +	______________	$______	− +
______________	$______	− +	______________	$______	− +
______________	$______	− +	______________	$______	− +

Schedule of A L P change: ______________________ $__________ − +

OVER

__________ external (Circle a, b, or c.)

DATE__________

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A =$__________ − +
CHANGE in L =$__________ − +
CHANGE in P TEMP. = $__________ − +
CHANGE in P PERM. = $__________ − +

(circle appropriate change)

Schedule of A L P change(s)

__________ $______ − +
__________ $______ − +
__________ $______ − +
__________ $______ − +

Schedule of A L P change(s)

__________ $______ − +
__________ $______ − +
__________ $______ − +
__________ $______ − +

Schedule of A L P change: __________ $______ − +

……

DATE__________ external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A= $__________ − +
CHANGE in L= $__________ − +
CHANGE in P TEMP = $__________ − +
CHANGE in P PERM. = $__________ − +

(circle appropriate change)

Schedule of A L P change(s)

__________ $______ − +
__________ $______ − +

Schedule of A L P change(s)

__________ $______ − +
__________ $______ − +

Schedule of A L P change: __________ $______ − +

……

2. If the fund were not reimbursed at the end of May, what work sheet and adjusting entry would be necessary to achieve correct account balances as of May 31? SHOW in correct general journal form.

1969

Hemisfair Hatchery maintains a checking account in the Umpteenth National Bank. On November 30, the bank statement shows a balance on deposit of $4,001.62, and the cash account balance of the same date is $3,620.04. The following items are revealed:

(1) Service charge for November, $4.56

(2) Deposit of November 10, $431.81, was entered on the books as $341.81.

(3) November 30 receipts, $410.00, not deposited.

(4) On November 4, a non-interest bearing note for $500.00 received from James R. Victor was discounted. On November 29, the maturity date of the note, Mr. Victor dishonored his note, and the bank charged the account of the Hemisfair Hatchery for maturity value plus a protest fee of $2.50.

(5) Check #6,001, written on November 19 for $871.15 and included in the cancelled checks returned by the bank, was entered in the check register as $817.51.

(6) Outstanding checks, November 30, $1,401.61.

(7) Check #6,131, for $112.23 was entered twice in the check register.

(8) Included in the cancelled checks returned by the bank, was a check for $241.36, written by the Hemisfair Hootch Company, and erroneously charged against the account of the Hemisfair Hatchery.

(9) Included in the deposit of November 25, was a check for $10.20, received from Oscar Blount. This check was returned by the bank, marked, "Insufficient Funds".

REQUIRED:

Prepare a bank reconciliation, November 30.

Name______________________________________ Petty Cash III

Below is the record which the CONFAB CO.'s petty cashier has kept since the fund was established on November 3.

I. Fill in the Page 3 form (one account per line) to show the accounts affected by posting the journal entry of that date. Place the amounts of all necessary debits or credits in the appropriate columns and blanks. Use MINUS BLANKS for CONTRA-ACCOUNTS -- under the column for accounts to which they are contra.

PETTY CASH RECORD

DATE		EXPLANATION	VCHR. NO.	RECEIPTS	PAYMENTS	DISTRIBUTION OF PAYMENTS			
						FREIGHT-IN	MISC. GEN. EXP.	SUNDRIES	
								ACCOUNT	AMOUNT
19-- Nov.	3	Estab. fund (Ch.No.32)		25 00					
	9	Express on purchase	1		6 50	6 50			
	12	Cleaning office	2		5 00		5 00		
	15	Carbon paper	3		2 25			Off. Supplies	2 25
	18	Postage on sale	4		2 00			Delivery Exp.	2 00
	23	Collect telegram	5		1 25		1 25		

II.a. On November 30, Horace Confab* requested and received $3.00 for his personal use. Record the disbursement for the petty cashier in the above form. (*proprieto

Noting that only four $1's and 2 quarters remained, Mr. Confab also directed his employee to reimburse the fund and signed a check for that purpose. COMPLETE THE ABOVE RECORD to reflect the petty cashier's compliance.

b. Show the effects of journalizing and posting the reimbursement of November 30 by using the necessary lines on the page 3 form. Follow directions as given in I, above.

III. How much of the journal entry would have to be changed if the reimbursement were postponed, but November 30 is the end of Confab's fiscal year? With what would you replace the account(s) changed?

Instead of . . .(you finish it)

example trans. Sold shares of WOOD Inc. for $10 less than their cost.

Identify the first account in each transaction by date.

NOTE → ALWAYS choose plus or minus by effect on basic equation, NOT the ACCOUNT BALANCE.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
				expense	income	revenue	Other
example	Cash	+ 80 -	+ -	+ -	+ -	+ -	+ -
○	Investment in WOOD stock	+ - 90	+ -	+ -	+ -	+ -	+ -
○	Loss on Security Trading	+ -	+ -	+ - 10	+ -	+ -	+ -
③		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -

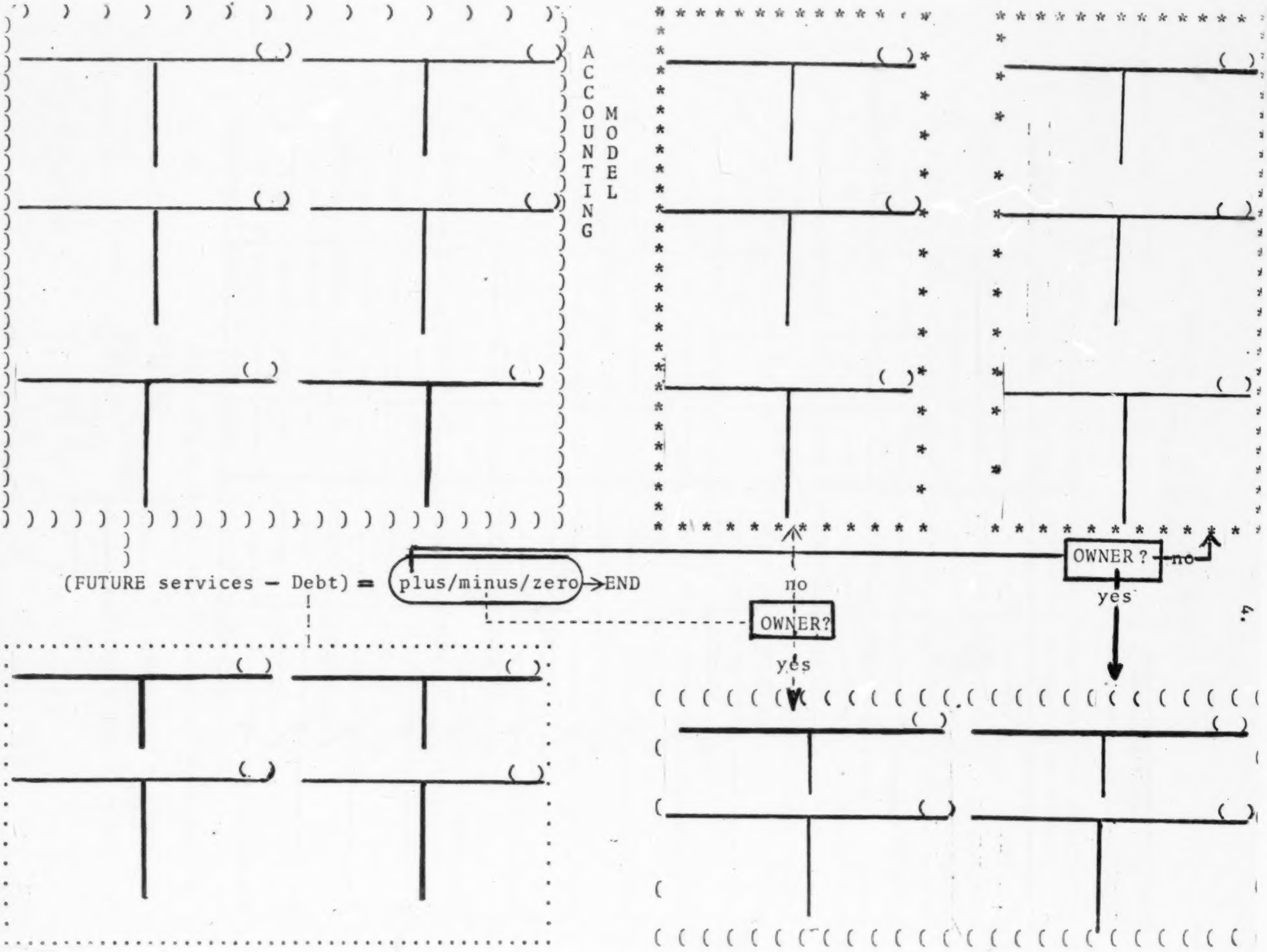
IV. Add, summarize and verify your work by showing that:

Change in total assets $________
minus
Change in total liabilities $________
____

equals

Change in permanent prop. $________
plus
Change in ... (what?) ________________
$____________
(how much?)

4.


ACCOUNTING MODEL
OWNER ?
no
yes
OWNER?
no
yes
(FUTURE services – Debt) = plus/minus/zero → END

BANK RECONCILIATION

A. In the appropriate column enter the amount of the correction to go on a bank reconciliation statement for each numbered item.

	TO BALANCE PER BOOKS		TO BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
1. Total of checks outstanding, $456.				
2. Bank charges for the month, $1.97				
3. Fee of $5 charged by bank because a note we discounted was not paid by its maker.				
4. Customer's N.S.F.* check returned by the bank, $18.50.				
5. Deposit mailed to the bank, but not received for inclusion on the bank's statement, $1592.34.				
6. Deposit of $705 was in transit on the bank's statement date.				
7. Bank reports collection of a note, $206 including interest, on its statement. Charge by the bank, for this service is deducted, $4.75. We were payee.				
8. Cancelled check of another of the bank's depositors mistakenly charged to us, $62.				
9. $12.50 check recorded in our journal as $125.00 is returned with our cancelled checks.				
10. $350 bank deposit in transit a month ago appears on our bank statement.				
11. Debit memorandum of the bank reports $75 savings bond purchase we have authorized when our balance exceeds $1000 on the 10th of the month.				
12. Our deposit of $606 recorded by the bank as $906.				

B. For EVEN NUMBERED items only, indicate in appropriate T-accounts the debits and credits our firm needs to make. (Use item numbers to key drs. to crs.)

---

* Insufficient funds

APPENDIX C

Treatment-Aptitude Interaction Model of Analyses

Exhibit	Title	Page
C	Financial Statement Classification, Graphs of Regression Lines for Each Treatment Against Three Aptitude Measures	3
D	Petty Cash, Graphs of Regression Lines for Each Treatment Against Two Aptitude Measures	5
E	Accounting for Bad Debts, Graphs of Regression Lines for All-Conventional and Combined Treatments Against Three Aptitude Measures	7

APPENDIX C

Treatment-Aptitude Interaction Model of Analyses

In this model, a regression line is computed for each treatment to be compared. The measure of performance is regressed against the measure of aptitude. In this study a treatment is a teaching method. Three measures of aptitude were used: a verbal score on the College Entrance Examination Board test and two grades. There is considerable ambiguity in the latter two measures (FRESHMAN MATH GRADE, FRESHMAN ENGLISH GRADE) which is discussed under findings and analysis.

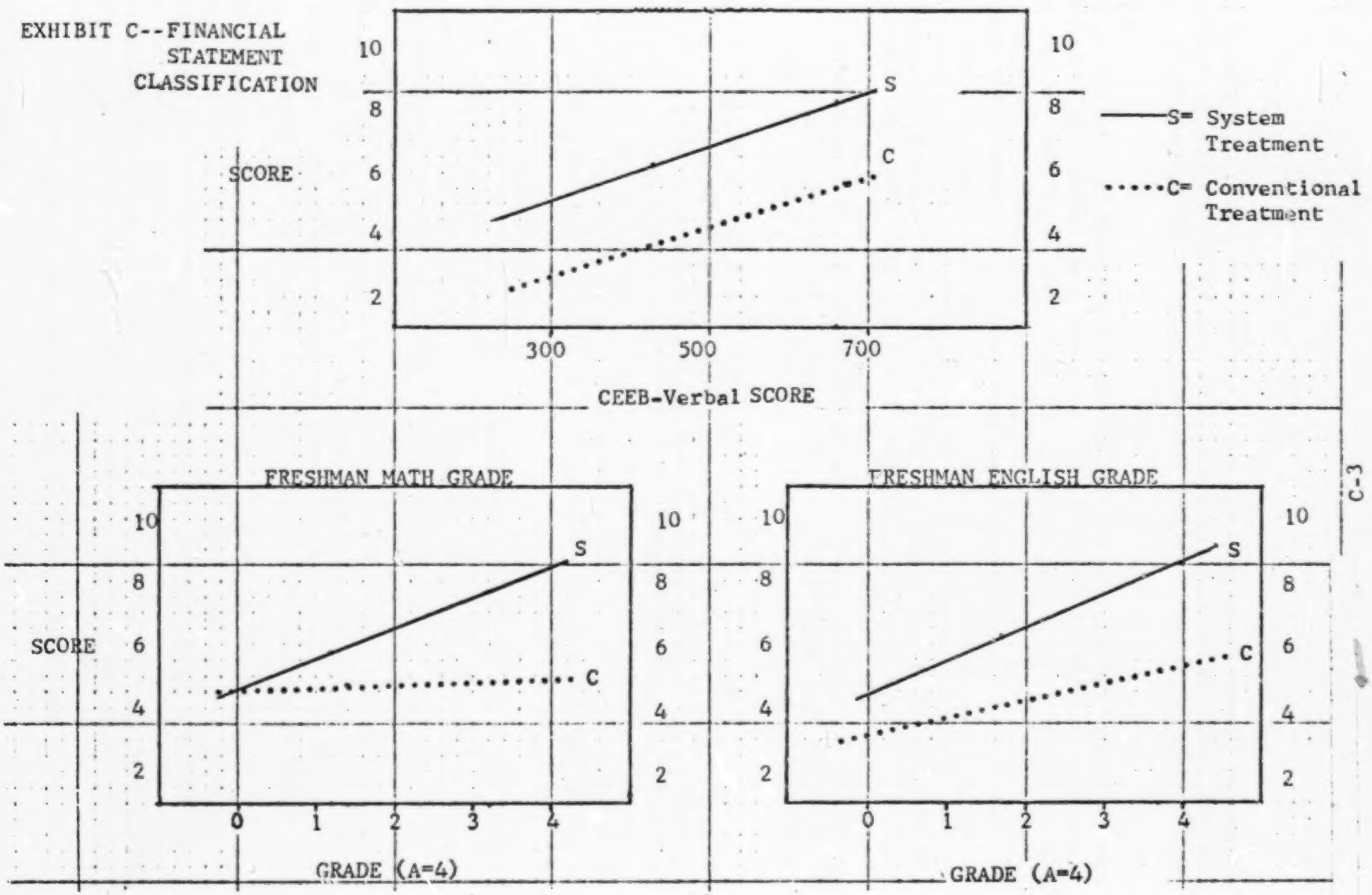
While the purpose of including this analysis was to search for clues to individualization by types of instruction, the results did not make such contributions. Instead, the significance of these results lies in the demonstration of very consistent superiority of the instructional system over conventional instruction - wherever this system was allowed to work. The graphs for sub-test 3 of the mid-term (Exhibit 3 , Financial Statement Relations) appear on page 23. The graphs (Exhibit C) on the next page are more typical of the dominance of the system method over conventional instruction. Unfortunately, there is no test of significance for such a difference. There is a test for difference of slope of the lines. However, even the graph on which the lines meet (FRESHMAN MATH GRADE) portrays a relationship in which the difference in slope does not approach the five percent level of significance.

Because of the consistency of the data, only a few graphs are shown. The largest differences were on sub-test 2 of the mid-term (Closing Entries) - a nearly consistent 5 out of a possible 11. On the first sub-test the differences range from 10 to 15 percent. The graph for the CEEB-verbal aptitude is very similar to the one for Financial Statement Classification. On sub-test 4 of the mid-term, the only crossing, the graph implied that the treatments are equally effective at a score of about 615. However, the crossing occurred at a point on the performance scale which is nearer to the maximum score than to the next lower score. The line for the system group is very flat because all scores were perfect except for one mistake each by two individuals. On this graph the slopes were significantly different with the lines for the conventional group descending rapidly, implying that verbal aptitude was handicapping. The difference approaches the .01 level of significance.

On the final examination the Adjustment topic (sub-test 6) shows the characteristic dominance. In this case, however, both slopes ascend with the CEEB-verbal score, the system line more rapidly. On sub-test 5 (Merchandising) the pattern for all graphs resembles the FRESHMAN ENGLISH GRADE graph shown for Financial Statement Classification. The average difference in performance is about 9 of a possible 23.

Graphs of Regression Lines for Each Treatment Against Three Aptitude Measures

EXHIBIT C--FINANCIAL
STATEMENT
CLASSIFICATION



Project Lessons

Since the system was not allowed to operate among the conventionally-prepared students with respect to most of the lessons, little information can be expected from treatment-interaction analysis comparing those who used the project developed lessons with those who did not. The exception will be presented later. First, we shall summarize the comparison of the all-system results with the combined results of both sections having conventional preparation. This is the same comparison as we have given for the pre-project topics.

In general, the dominance of the system instruction is maintained. This is most markedly so for the Cost of Borrowed Money lesson, where the system line ascends much more rapidly to a difference of about 6 points in a possible 17. There is a crossing where the CEEB-verbal score is 400. The difference in slopes on this graph is significant at the .05 level. For the Bad Debts topic, there is a similar dominance, despite the inclusion in the conventional group of the significantly better scores of those who used the new lesson. There is, again, a crossing at a CEEB-verbal score of 400 and one where the FRESHMAN MATH GRADE is D.

On the Petty Cash lesson, the graph for FRESHMAN ENGLISH GRADE shows system dominance over all relevant ranges. The other two graphs (Exhibit D) show differences in slopes which were statistically significant. The top graph indicates that teaching methods tended to be equally effective for those with a verbal score of 485. The difference between methods would appear to be important below 400, (for which there were no system cases) and at 580 and beyond.

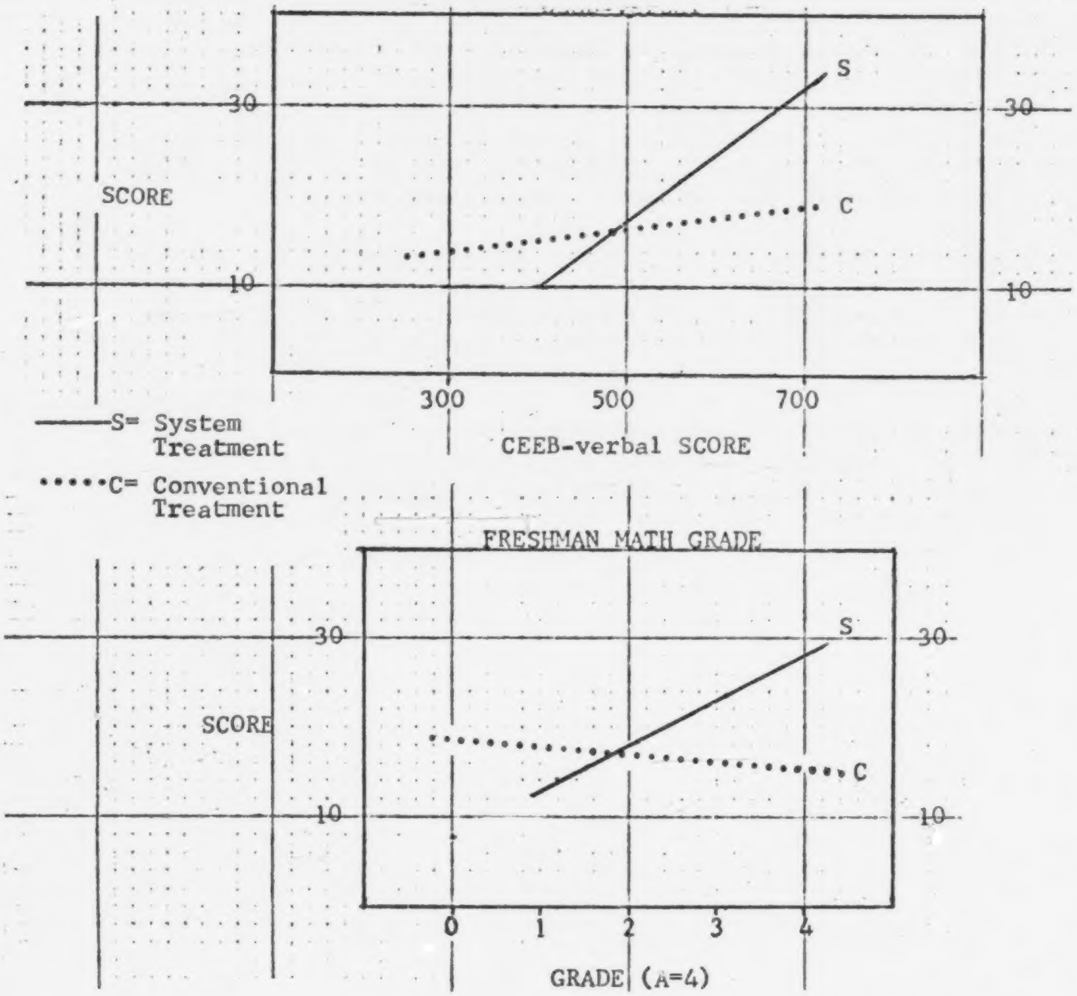
The crossing slightly below the grade of C for FRESHMAN MATH means that the system tended to benefit most of the students who received that treatment. In this group there were no F's and the average grade, a little below B, indicates that half the group must have derived significant advantage from the system treatment. Unfortunately, the dismotivating effect of telling these students that their grade would not be affected unduly makes it difficult to determine whether the advantage for the system students is more nearly in comparison to conventional instruction or in comparison to no instruction at all. It should also be recalled that a significant fraction of the system group had not yet satisfied this progress check at the time of the final examination. Of course, some had done the necessary study, but twenty to thirty percent of system students would, but had not yet, mastered the topic.

As one would expect from the very similar, and satisfactory, performance of all groups on the Bank Reconciliation topic, the lines of all groups are very close together over the relevant ranges; crossings

EXHIBIT D

PETTY CASH

Graphs of Regression Lines for Each
Treatment Against Two Aptitude Measures



occur as follows:

CEEB-verbal = 580
FRESHMAN MATH GRADE = 1.9 (a D+)
FRESHMAN ENGLISH GRADE = 3.5 (a B+)

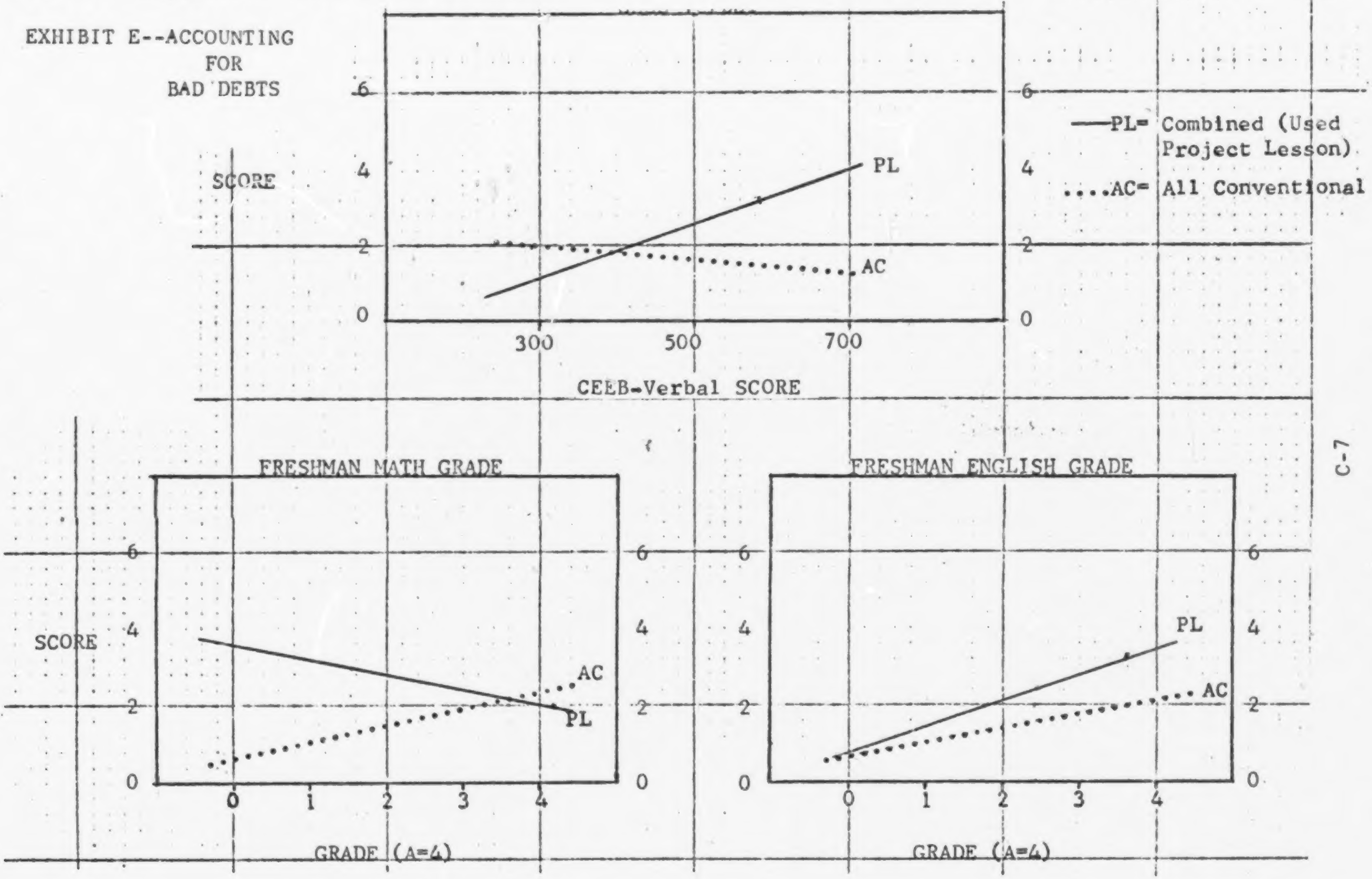
In each case, it is the system line which dominates over the greater part of the range - above the crossing in the case of FRESHMAN MATH GRADE and below the crossing for the other two measures.

Since it does appear that, despite a disappointingly infrequent demonstration of mastery, the motivating effect of the system was not neutralized in time to prevent its having a significant effect; graphs comparing the "all-conventional" and the "combined" treatments on the Bad Debts lesson are of interest. As shown on the next page, the group who had the project-developed lesson dominated those who did not except below a 400 score on the CEEB-verbal measure (no system cases) and for those FRESHMAN MATH GRADES of better than B+.

In summary, subject to the qualifications affecting the quality of the grades as aptitude measures (see Findings, page 19), the treatment-interaction analysis offers many replications in which the instructional system produced substantial advantage for students of some aptitudes and were, at most, trivially disadvantageous for those with other aptitudes. There is support for the view that entering behaviors are critical to all of the project lessons except "Reconciling the Bank Account." Probably because of a few cases where those behaviors existed, or were reinstated, there is even evidence that under the system contingencies the use of at least one project lesson is superior to conventional instruction under the same contingencies.

Graphs of Regression Lines for All-Conventional and Combined Treatments Against Three Aptitude Measures

EXHIBIT E--ACCOUNTING
FOR
BAD DEBTS



APPENDIX D

Project Lessons

Accounting for Bad Debts		yellow cover page
Accounting Cycle Supplement The Accounting Model	These supplements support more than one lesson, and would, of course, be needed if one of these lessons is used alone.	behind yellow cover page
Cost of Borrowed Money		green cover page
Imprest Funds - A Petty Cash Example		pink cover page
Reconciling the Bank Statement		blue cover page
Answer Supplement to Reconciling the Bank Statement		green pages

ACCOUNTING FOR "BAD DEBTS"

The following pages are self-instruction in an accounting topic which often proves needlessly confusing. It is intended for use by anyone who is familiar with the accounting cycle for merchandising firms (and, of course, service businesses). Because of this, you may find us using a synonym for a term with which you are most familiar. We have tried to mention these synonyms where they are first needed, and to connect our terms to an example. You should be able to see what we mean --even though you are used to another label. (The supplements mentioned below will help with some of them.)

For reference, the following topics will be found as indicated.

Topic — page
An overview.................................. 1
(A reminder on "Timing").................. 6
"Writing-off" uncollectible Accounts........ 9
Making the Bad Debts Adjustment............. 14
(Testing an outcome)...................... 15
"Aging" Accounts Receivable................. 24
(Also Panel D - pink)
Recovery of a 'Write-off".................. 44
A summary problem........................... 49

Unless you received them with another lesson, two supplements follow. Put the blue one aside until you are instructed to refer to it.

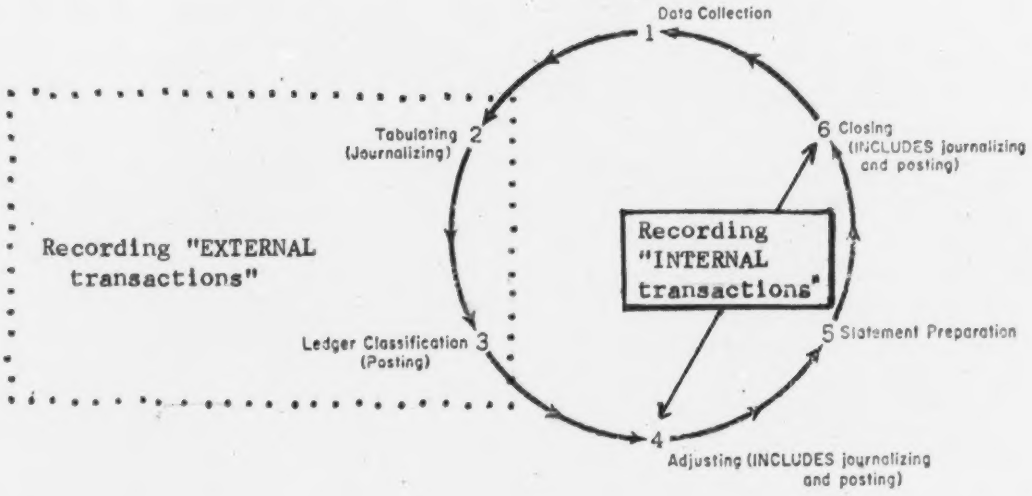
The other supplement (green pages, yellow cover page) is entitled, "The Accounting Model." Two ways to use it are described on its cover.

You should start on the first supplement page and go through all the green pages. It should be easy because you recognize familiar things, even though they are in new settings and formats. This lesson assumes that you know what assets and liabilities are and that a ledger keeps track of each one of them. It also assumes that you realize that the rest of a ledger keeps track of the difference between their totals - and that you understand which part of the difference is the basis of profit computation. The model should merely be a reminder, but you can't do the lesson until you understand this basic structure.

AFTER YOU LOOK AT THE SUPPLEMENT, read page 1.

ACCOUNTING CYCLE SUPPLEMENT

THE ACCOUNTING CYCLE


1 Data Collection
2 Tabulating (Journalizing)
3 Ledger Classification (Posting)
4 Adjusting (INCLUDES journalizing and posting)
5 Statement Preparation
6 Closing (INCLUDES journalizing and posting)
Recording "EXTERNAL transactions"
Recording "INTERNAL transactions"

CONTENTS

Matching of cycle steps...... ..... 3*

Illustrations of cycle activities.. 4-7

EXERCISES (to aid recall)

These practice items may bring a new, better understanding of something you've previously studied. Neither they, nor the illustrations are meant to be first exposure to the subject matter, and would seldom be adequate.

See these pages for reference to solutions...................... 8-15

*SOLUTION to page 3.............. BOTTOM OF 15

EXERCISE solutions............... 16 and 17

The six activities of the accounting cycle are described in the following list and are illustrated (IN A DIFFERENT ORDER) on the following pages.

MATCH the numbers in the cover illustration to the appropriate description. USE THE LEFT-HAND BLANKS.

In the BLANKS ON THE RIGHT place the letter of each illustration beside its description.

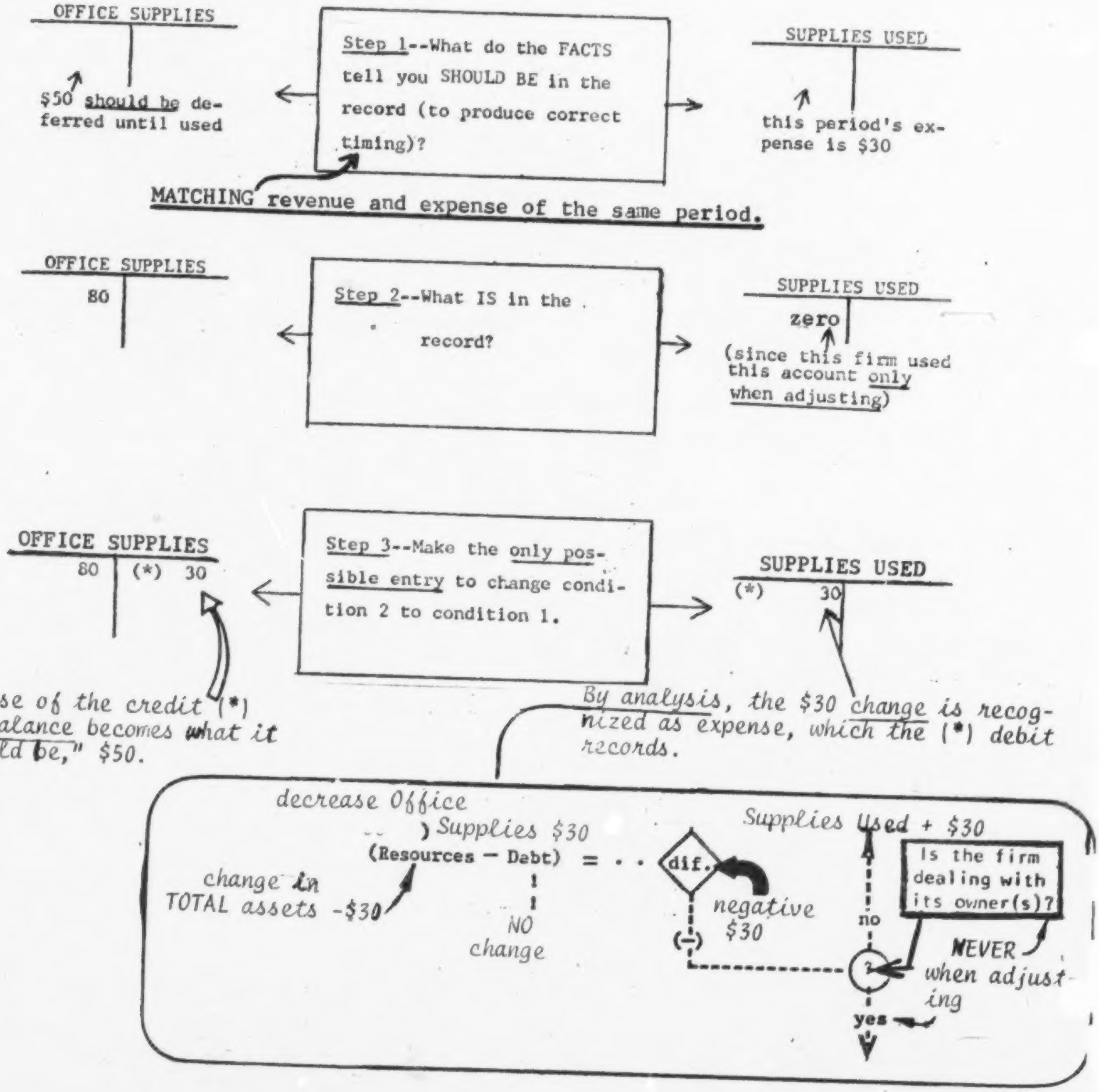
____	Assemble transaction documents, etc.	____
____	Classify price-measures under each account affected.	____
____	Condense and summarize owners' equity in the ledger.	____
____	List, chronologically, the complete effect of each transaction on the ledger.	____
____	Provide up-to-date balances for Financial Reporting.	____
____	Organize the account balances into: a formal profit calculation, and a summary of the state of assets and equities.	____

4. Ⓐ

FACTS (on which the illustration is based):

A count of office supplies revealed $50 worth on hand. (Looking at the ledger, we find an $80 balance in the account.)

THREE STEPS WHICH WILL ALWAYS WORK (on any and every adjustment)



OFFICE SUPPLIES

$50 should be deferred until used

Step 1--What do the FACTS tell you SHOULD BE in the record (to produce correct timing)?

SUPPLIES USED

this period's expense is $30

MATCHING revenue and expense of the same period.

OFFICE SUPPLIES

80

Step 2--What IS in the record?

SUPPLIES USED

zero

(since this firm used this account only when adjusting)

OFFICE SUPPLIES

80 | (*) 30

Step 3--Make the only possible entry to change condition 2 to condition 1.

SUPPLIES USED

(*) 30 |

Because of the credit (*) the balance becomes what it "should be," $50.

By analysis, the $30 change is recognized as expense, which the (*) debit records.

decrease Office Supplies $30

(Resources — Debt) = . . dif.

change in TOTAL assets -$30

NO change

negative $30

(−)

Supplies Used + $30

Is the firm dealing with its owner(s)?

no

yes

NEVER when adjusting

Building and Land	13000	
Dividends from Stock	(a) 725	725
Marketable Stocks and Bonds	1500	
Capital Stock		2000
Cash and Receivables	200	
Interest Expense	75	(a) 75
Notes Payable		125
Utilities	200	(a) 200
Commissions Earned	(a) 3175	3175
Prepayment for Use of Copyrights	500	
Professional Organization Dues	175	(a) 175
Unpaid Wages		325
Wages	700	(a) 700
Retained Earnings		10,000 (a) 2,750

ALL the effects of the entry

keyed by (a).

Ⓑ

Ⓒ

1

Revenue or income from operations:

Total $XXXXXXX

Operating Expenses:

Total $XXXXXXX

$XXXXX

Non-operating items:

(+'s) (-'s)

XXXXX

Net income........................... $XXXXX

2

Initial capital of owner(s) $XXXXXX

Additions:

↑

Net income OR Net Loss XXXX

↓

$XXXXXX

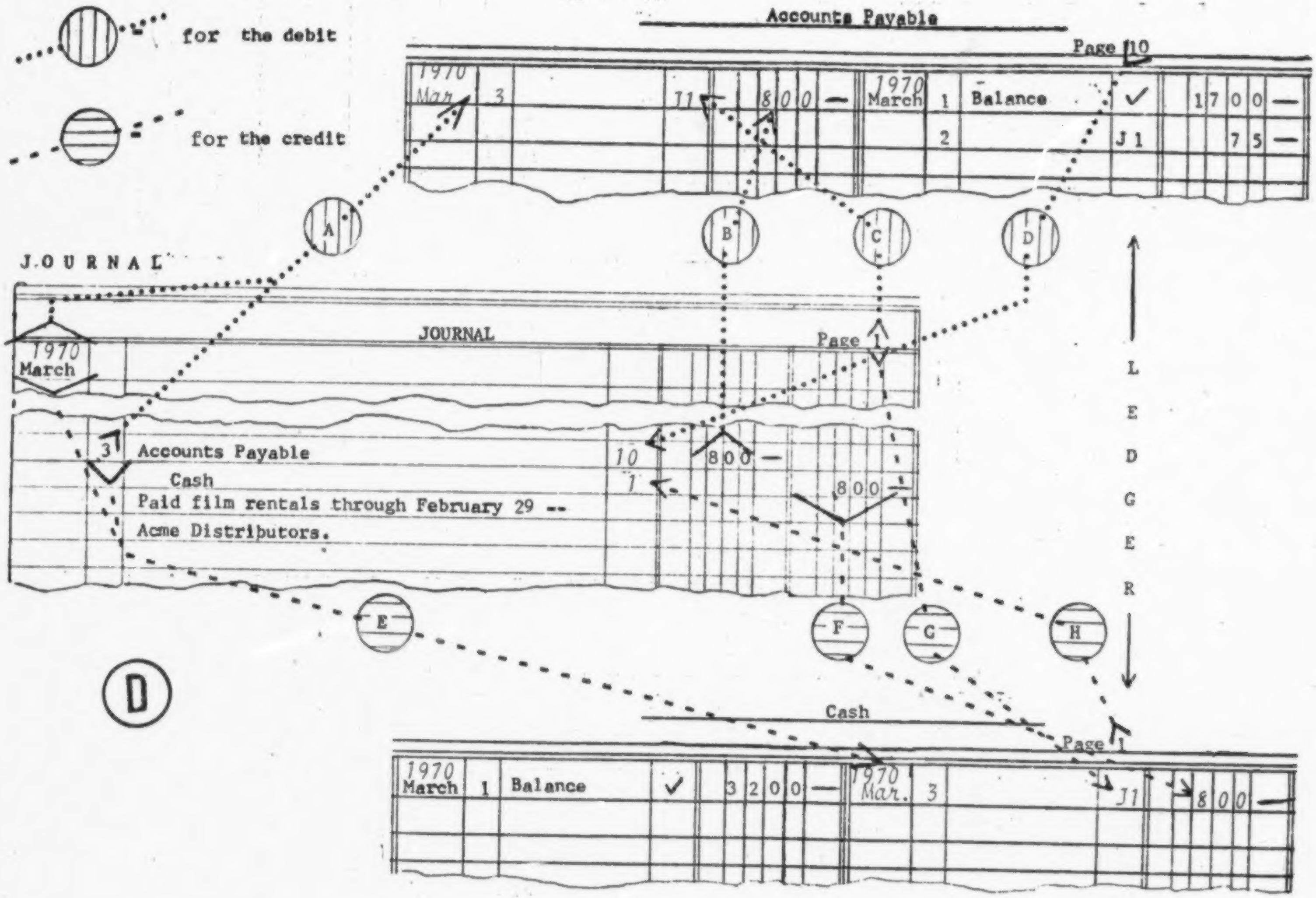
Deductions: XXXX

Period-end balance of Capital... $XXXXXX

3

Current Assets:	Current Liabilities:
	Non-current Liabilities:
	Total....$XXXXX -
Non-current Assets:	Ownership equity:
	Total XXXXX
TOTAL . . .$XXXXXXX - Ⓓ	TOTAL . . . . . $XXXXXXX

Arrows POINT to what was written. They begin where the information was found.


for the debit
for the credit
Accounts Payable
Page 10
1970 Mar. 3
J1
800 —
1970 March 1 Balance ✓ 1700 —
2 J1 75 —
A
B
C
D
JOURNAL
JOURNAL
Page 1
1970 March
3 Accounts Payable 10 800 —
Cash 1 800 —
Paid film rentals through February 29 --
Acme Distributors.
L E D G E R
E
F
G
H
D
Cash
Page 1
1970 March 1 Balance ✓ 3200 —
1970 Mar. 3 J1 800 —

Ⓔ

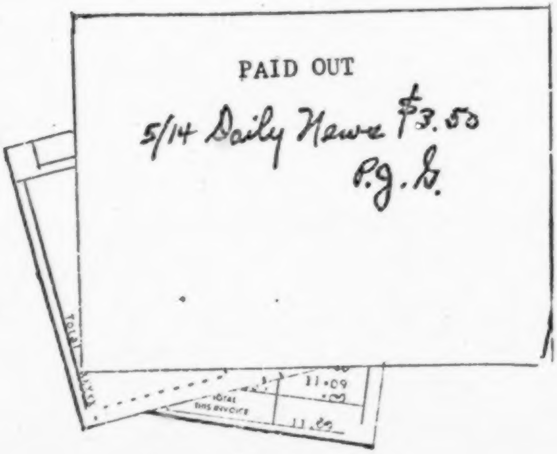
Page 1

1970					
Mar.	2	Equipment	5	75 -	
		Accounts Payable	10		75 -
		Bought supplies from Stanley News Company.			
	3	Accounts Payable	10	800 -	
		Cash	1		800 -
		Paid film rentals through February 29 -			
		Acme Distributors.			
	3	Cash		260 -	
		Notes Receivable			250 -
		Interest Income			10 -
		Collected note and interest due today from			
		Fred Fox.			

Some format rules for EACH transaction:

- No credit should come before any debit.
- Titles of accounts to be credited are always indented.
- An explanation follows the last credit.
- A line is skipped between transactions.
- No entry should continue from one page to the next.

Checks, receipts, invoices, payroll records, sales slips, memoranda, etc.


TOTAL
TOTAL THIS INVOICE
11.09
11.09

PAID OUT

5/14 Daily News $3.50
P.J.S.

Ⓕ

Journalizing EXERCISES

1. Two of the following excerpts from the Otis Seymour journal are correct.
   a. Circle their letters.
   b. Indicate the defects with the letters of the wrong ones.

DEFECTS:

Title of the credit is not indented in A.

The date is not sufficiently complete in _____ and _____.

Line not skipped between transactions _____.

A.

	18	Cash		1500--	
		Otis Seymour, Capital			1500--
		Additional investment by			
		Seymour.			

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

B.

	31	*Otis Seymour, Capital*		15700	
		Profit and Loss			15700
		To close loss to capital.			

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

C.

	21	Cash		700--	
		Income from Services			700--
		Payment for services per-			
		formed for Clancy & Co.			
	21	Wages Expense		750--	
		Cash			750--
		Payment of Wages.			

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

D.

1970					
	19	Land		15000--	
		Building		75000--	
		Legal Expenses & Taxes		1700--	
		Mortgage Payable			60000--
		Cash			31700--
		Paid down payment on a parcel			
		of land and a building and			
		assumed mortgage from Olsen			
		Real Estate Co.			

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

E.

	12	*Accounts Payable*		8900	
		Office Equipment			8900
		Returned machine to Mayhew.			

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

F.

March		*Cash*		7000	
		Income from Services			7000
		Completed, and collected for,			
		several small jobs.			

2. Journalize the entry in the illustration of closing on page 5. Use June 30 (current year) as the end of its accounting cycle.

SOLUTIONS to journalizing
exercises, page 16

Posting EXERCISES

1. **Enter the other letters from the illustration on page 6 in the blank before the appropriate description in the following list.**

H Complete the cross-referencing by inserting the ledger page (or account) number in the "ledger folio" column on the credit line.

_____ Copy the amount in the journal's debit column in the left-hand column of the account debited.

_____ Enter the date shown in the journal in the date space(s) on the left of the account debited.

_____ Write "J" and the journal page number in the credit posting-reference column of the account credited in the journal.

_____ Write the amount of the credit shown in the journal in the credit-amount column of the account named in the journal credit entry.

_____ As a reference, write "J" followed by the page number of the journal in the account column to the left of the debit amount posted.

_____ Copy the date from the journal entry in the right-hand date space(s) of the ledger account to be credited.

_____ Cross-reference the debit posted by giving the ledger-page (or account) number in the journal. Write it in the "ledger folio" column on the line where the debit is journalized.

2. a. **Give the dates of any journal entries in the page 7 illustration which have been posted.** __________

b. **Post any unposted transactions in the illustration to the accounts below. Entitle the other account if you need it.**

Cash

PAGE 1

1970									
Mar	-	(bal.)	✓	1000 57					

SOLUTIONS to
these exercises,
page 16

Notes Receivable

PAGE 11

1970									
Mar	-	(bal.)	✓	600 00					

PAGE 47

1. There are six possible effects of correct adjusting entries. (The following statements include the effect of using contra-accounts on the account to which it is contra. For example, crediting Accumulated Depreciation constitutes the "asset is decreased" part of c.)

a. an asset is increased and income (or revenue) is increased.
b. a liability is increased and expense is increased.
c. an asset is decreased and expense is increased.
d. a liability is decreased and income (OR revenue) is increased.
e. an expense is decreased and an asset is increased.
f. an income (OR revenue) account is decreased and a liability is increased.

Here are eight correct adjustments. In the blank before each pair of accounts, place the letter which describes its effect.

____ (1)

Salary Expense		Salaries Accrued	
5000			(1) 400
(1) 400			

____ (2)

Subscriptions Earned		Deferred Subscriptions	
	(2) 5030	(2) 5030	9050

____ (3)

Insurance Expense		Prepaid Insurance	
600	(3) 400	(3) 400	

____ (4)

Unearned Rent		Rent Earned	
	(4) 4500	(4) 4500	6250

____ (5)

Accrued Interest		Interest Earned	
(5) 17			60
			(5) 17

____ (6)

Customers' Deposits		TV Service Contracts Expired	
(6) 407	847		(6) 407

____ (7)

Machinery Depreciation		Accumulated Depr. of Machinery	
(7) 1800			9000
			(7) 1800

____ (8)

Advances to Agents		Agents' Commissions	
5400	(8) 2500	(8) 2500	

2. In every adjustment, one account (occasionally more) belonging to total assets or total liabilities is changed. (The remainder of the entry affects net income, of course.)

   Accruals of receivables or payables are one type of account in each class. Different types of assets and liabilities arise from advance payments and collections.

   For each of the items on page 11, write the full and precise title of the balance sheet account (also known as "permanent" or "real" accounts) in the boxes at the top of the next page. Choose the box labelled with the appropriate phrase. (AS EXAMPLES, each box contains a title NOT INCLUDED IN THE PRIOR PAGE EXAMPLES, which is appropriate.)

3. Enter analyses for the following three cases where adjustment is needed in the columnar analysis form at the bottom of page 13.

   (The form is illustrated on page 6 in the "ACCOUNTING MODEL" supplement.)

   1. Prepaid Advertising remaining at this date is $40.
   2. We have earned 1/3 of the $1800 annual fee collected October 1 from C'est la VW.
   3. One-half the next tax payment of $700 applies to the last three months of this year.

LEDGER:

Accounts Receivable	300	
Accrued Wages		
Advertising		
Capital Stock		1000
Cash	1600	
Deferred Advertising Exp.	420	
Miscellaneous Exp.	2500	
Notes and Accts. Payable		900
Property Taxes Payable		
Property Taxes	1400	
Retained Earnings	510	
Revenue from Fees		4900
Supplies	70	
Unearned Advances from Cust		

ASSETS		LIABILITIES	
future cash expected	(ex) Commissions Receivable	future cash payment	(ex) Taxes Payable
specific service expected	(ex) Supplies	for product or service	(ex) Fees Collected in Advance

Column SUB-headings merely identify the class of account affected. + and − refer to increase and decrease in O. equity.

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
			expense	income	revenue	Other
①	+ −	+ −	+ −	+ −	+ −	+ −
○	+ −	+ −	+ −	+ −	+ −	+ −
②	+ −	+ −	+ −	+ −	+ −	+ −
○	+ −	+ −	+ −	+ −	+ −	+ −
③	+ −	+ −	+ −	+ −	+ −	+ −
○	+ −	+ −	+ −	+ −	+ −	+ −
	+	+	+	+	+	

SOLUTIONS, page 17.

Closing entry EXERCISES

1. The five lettered items on these two pages are either descriptions or illustrations of correct or incorrect procedures for closing the books (cycle step 6).

For each item, either:

a. circle its letter, if correct, OR

b. indicate which three items have the deficiencies mentioned here:

DEFICIENCIES:

A too many accounts are closed

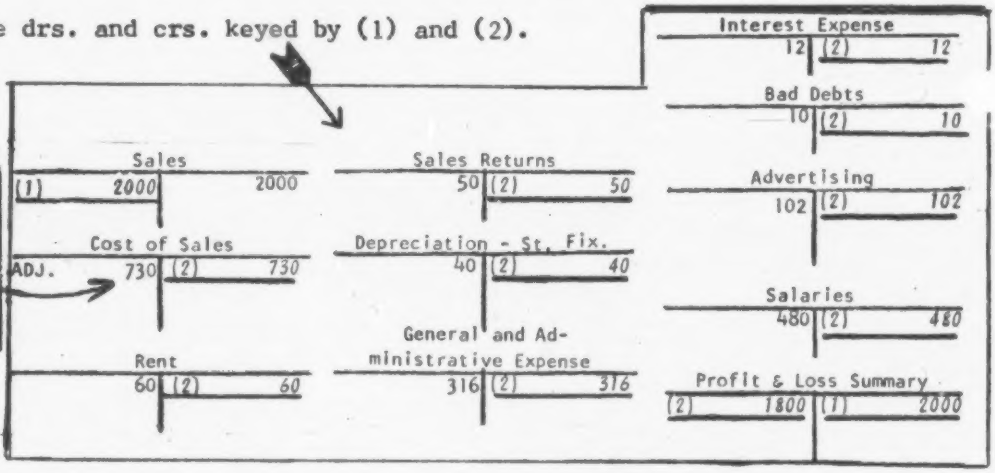
____ the temporary accounts will not have zero balances

____ the profit has not been transferred to a Balance Sheet account.

A. Debit all accounts with credit balances.
Credit all accounts with debit balances.

B. Making the drs. and crs. keyed by (1) and (2).

NOTE: ALL examples assume merchandise accounts have already been adjusted to create Cost of Sales balance.


Sales
(1) 2000
2000
Cost of Sales
ADJ.
730
(2) 730
Rent
60
(2) 60
Sales Returns
50
(2) 50
Depreciation - St. Fix.
40
(2) 40
General and Administrative Expense
316
(2) 316
Interest Expense
12
(2) 12
Bad Debts
10
(2) 10
Advertising
102
(2) 102
Salaries
480
(2) 480
Profit & Loss Summary
(2) 1800
(1) 2000

C. Closing the books is condensing the record of owners' equity by cancelling all balances of accounts which collect profit-changes and substituting (in this case) a net $200 credit in Retained Earnings.

D. Recording these changes:

Account titles	OWNERS' EQUITY CHANGES: expense	income	revenue	Other
Sales			- 2000	
Cost of Sales	+ 730			
Rent	+ 60			
Interest Expense	+ 12			
Bad Debts			+ 10	
Advertising	+ 102			
Salaries	+ 480			
Sales Returns			+ 50	
Depreciation - Store Fixtures	+ 40			
General and Administrative Exp.	+ 316			
Retained Earnings				+ 200

NOTE: + & − refer to owner equity change; NOT necessarily to account balance change.

SOLUTION TO
closing exercise, page 17

E. Posting this journal entry.

31	Cost of Sales	730 00	
	Rent	60 00	
	Interest Expense	12 00	
	Bad Debts	10 00	
	Advertising	102 00	
	Salaries	480 00	
	Sales Returns	50 00	
	Depreciation - Store Fixtures	40 00	
	General and Administrative Exp.	316 00	
	Retained Earnings	200 00	
	Sales		2000 00
	Annual closing of the books.		

ANSWER LISTS for page 3:

1 . . . . F
3 . . . . D
6 . . . . B
2 . . . . E
4 . . . . A
5 C

ANSWERS for journalizing exercises: 1. a. B and E are correct.

b. Defects: A

D and F

C

2.

19xx					
June	30	Commissions Earned		3175 00	
		Dividends from Stock		725 00	
		Interest Expense			75 00
		Professional Organization Dues			175 00
		Wages			700 00
		Utilities			200 00
		Retained Earnings			2750 00
		To close profit to Retained Earnings.			

ANSWERS for posting exercises: 1. H
B
A
G
F
C
E
D

2.

3	Cash	1	260 -	
	Notes Receivable	11		250 -
	Interest Income	47		10 -
	Collected note and interest due today from Fred Fox.			

Cash

PAGE 1

1970									
Mar	-	(bal.)	✓	1000 57					
	3		J1	260 00					

Notes Receivable

PAGE 11

1970					1970				
Mar	-	(bal.)	✓	600 00	Mar.	3		J1	250 00

Interest Income

PAGE 47

					1970				
					Mar.	3		J1	10 00

ANSWERS to adjusting exercises: 1.

b	(1)	a	(5)
d	(2)	d	(6)
e	(3)	c	(7)
b	(4)	c	(8)

ASSETS		LIABILITIES	
future cash expected	(ex) Commissions Receivable	future cash payment	(ex) Taxes Payable
	(5) Accrued Interest		(1) Salaries Accrued
specific service expected	(ex) Supplies	for product or service	(ex) Fees Collected in Advance
	(3) Prepaid Insurance		(2) Deferred Subscriptions
	(7) Accumulated Depreciation of Machinery		(4) Unearned Rent
	(8) Advances to Agents		(6) Customers' Deposits

Column SUB headings merely identify the class of account affected. + and − refer to increase and decrease in O. equity.

ACCOUNT TITLES	Asset change	Liab. change	CHANGE in Owner's equity			
			expense	income	revenue	OTHER
① Advertising			- 380			
○ Deferred Adv. Expense	+ 380					
② Unearned Advances from Customers		+ 1200				
○ Revenue from Fees					-1200	
③ Property Taxes			- 350			
○ Property Taxes Payable		+ 350				

ANSWER to posting exercise:

I. DEFICIENCIES: A

E (EACH ONE WAS INCREASED, NOT CANCELLED.)

B

C and D should be circled.

THE ACCOUNTING MODEL

1. A concise illustration of the relationships among accounting events, the ledger and reports.
2. A means of familiarization with a variety of blank forms used in teaching and testing.

The GREEN PAGES illustrate the use of gradually more complex forms. Relationships based on the accounting equation are summarized in a flowchart (THE ACCOUNTING MODEL).

INDEX

The YELLOW PAGES show the variety of forms in blank (usually reduced) versions, together with page references to illustrations of their use in the green pages. Related portions of different forms are identified; so that IF YOU ARE FAMILIAR WITH SOME FORMS YOU CAN FIND HOW A NEW FORM ORGANIZES ITS DATA DIFFERENTLY.

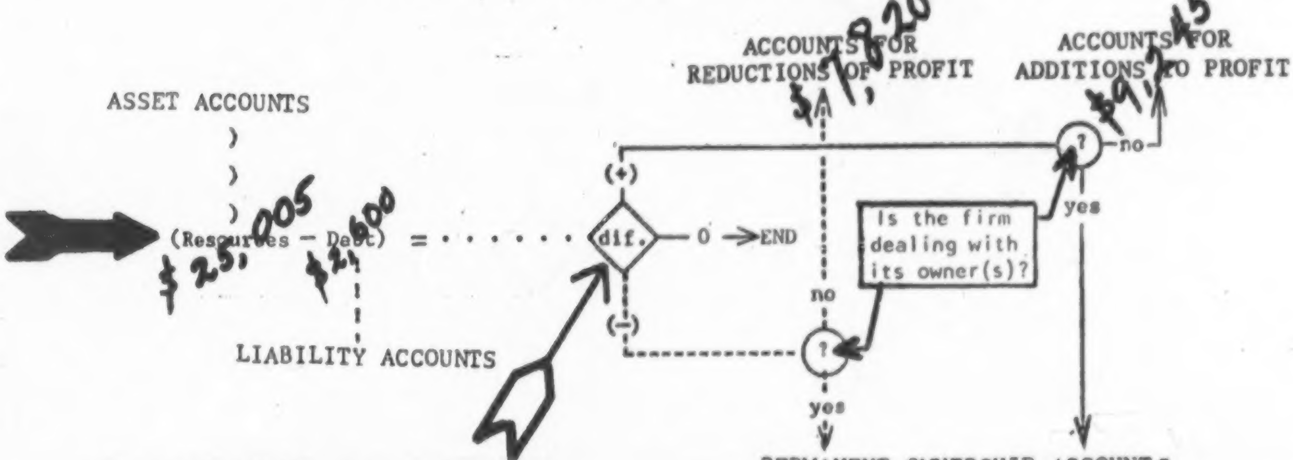
THE ACCOUNTING MODEL

Every ledger is an equation. This list of all the Star Discount Store accounts

STAR DISCOUNT STORE
Trial Balance
July 31, 1970

	Dr.	Cr.	
1. Cash	$11,555		
2. Accounts Receivable	4,260		
3. Allowance for Doubtful Accounts		$ 810	$25,005
4. Inventory	3,580		
5. Store Fixtures and Equipment	7,800		
6. Accumulated Depreciation		1,380	
7. Accounts Payable		2,360	
8. Withheld Income Taxes		200	$2,600
9. Payroll Taxes Payable		40	
10. James Ogilvie, Capital		20,980	
11. Sales		9,245	
12. Cost of Goods Sold	5,270		
13. Salaries	1,400		
14. Payroll Tax Expense	70		
15. Rent	300		
16. Advertising Expense	280		$7,820
17. Heat and Light Expense	105		
18. Telephone Expense	35		
19. Sales Returns	70		
20. Uncollectible Account Expense	230		
21. Depreciation Expense	60		
Totals	$35,015	$35,015	

has been summarized, below, to show the equality.

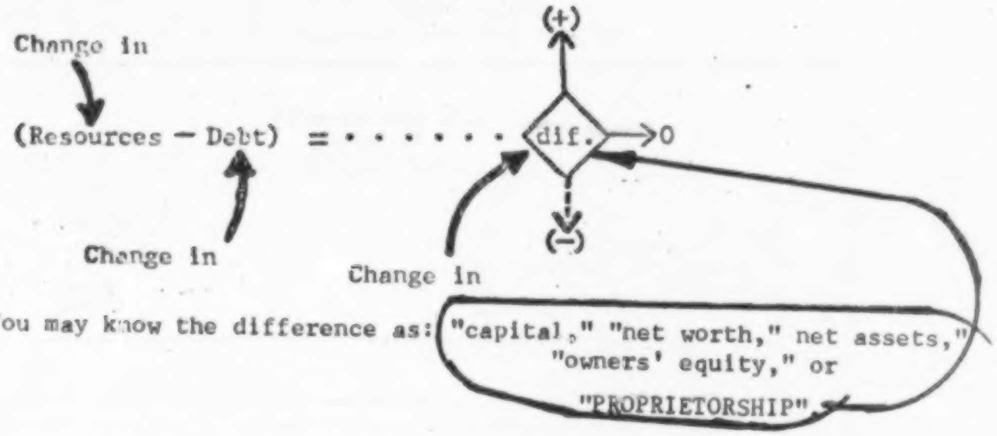

ACCOUNTS FOR REDUCTIONS OF PROFIT
$7,820
ACCOUNTS FOR ADDITIONS TO PROFIT
$9,245
ASSET ACCOUNTS
)
)
)
(Resources − Debt) = · · · · · ·
$25,005
$2,600
LIABILITY ACCOUNTS
(+)
dif.
0 → END
(−)
?
no
yes
Is the firm dealing with its owner(s)?
?
no
yes
PERMANENT OWNERSHIP ACCOUNTS
$20,980

The whole difference is $22,405.

Show that the account balances for owner's equity combine to agree:

($20,980 + $__________ − $__________) = $______________.

An equation in the ledger is unavoidable. Every event is recorded so that:

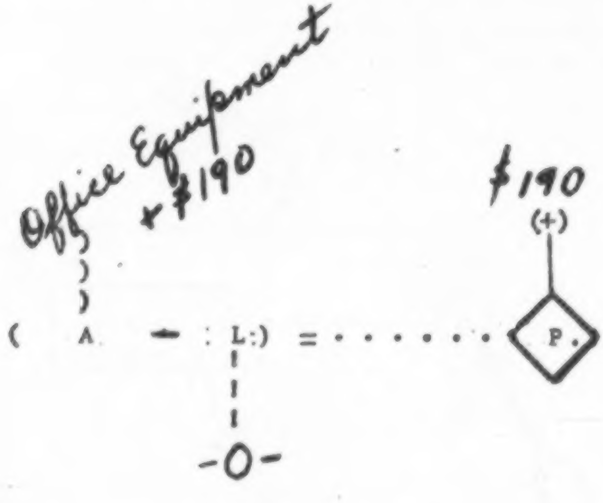


You may know the difference as: "capital," "net worth," net assets," "owners' equity," or "PROPRIETORSHIP".

It is from "proprietorship" that P has been chosen as a symbol for the whole amount of the owners' equity. IN SYMBOLS, then, the BASIC ACCOUNTING EQUATION is:

A	−	L	=	P
(for TOTAL assets)		(for TOTAL liabilities)		(for TOTAL proprietorship)

With these symbols substituted, the diagram now shows how the equation is changed by the event which is described in the box beneath it.

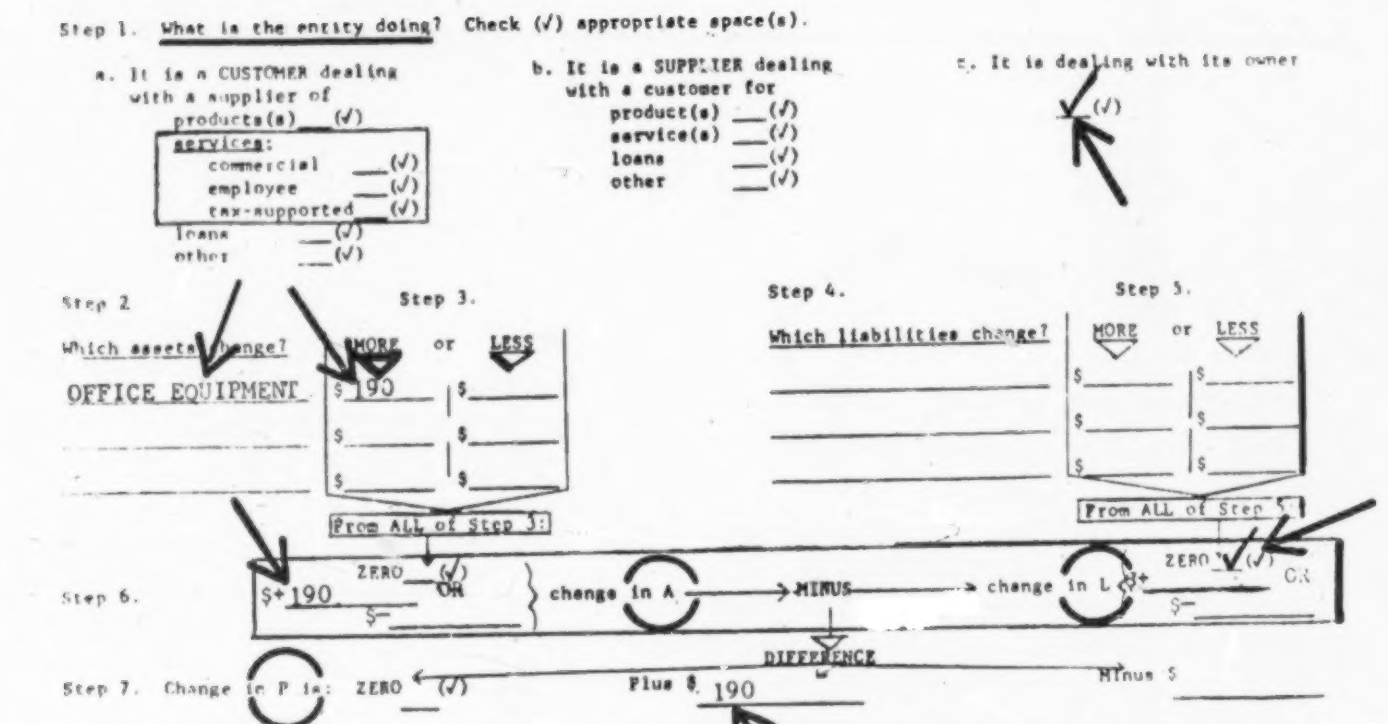


EVENT (transaction) a. An owner of the firm (the entity) contributes a used desk and chair, valued at $190, as a part of his investment in the business.

At the top of the next page, the SAME EVENT has been entered in a TRANSACTION ANALYSIS FORM. Note the symbols in the circles.

* * * * * * * * * * * * * * * * *
* Note that there is NO reference to debits or *
* credits, only to how the accounts (and totals) *
change.
* * * * * * * * * * * * * * * * *

TRANSACTION ANALYSIS FORM



Step 1. What is the entity doing? Check (✓) appropriate space(s).

a. It is a CUSTOMER dealing with a supplier of
products(s) ___ (✓)
services:
commercial ___ (✓)
employee ___ (✓)
tax-supported ___ (✓)
loans ___ (✓)
other ___ (✓)

b. It is a SUPPLIER dealing with a customer for
product(s) ___ (✓)
service(s) ___ (✓)
loans ___ (✓)
other ___ (✓)

c. It is dealing with its owner
✓ (✓)

Step 2

Which assets change?
OFFICE EQUIPMENT

Step 3.
MORE or LESS
$ 190 | $___
$___ | $___
$___ | $___
From ALL of Step 3:

Step 4.

Which liabilities change?

Step 5.
MORE or LESS
$___ | $___
$___ | $___
$___ | $___
From ALL of Step 5:

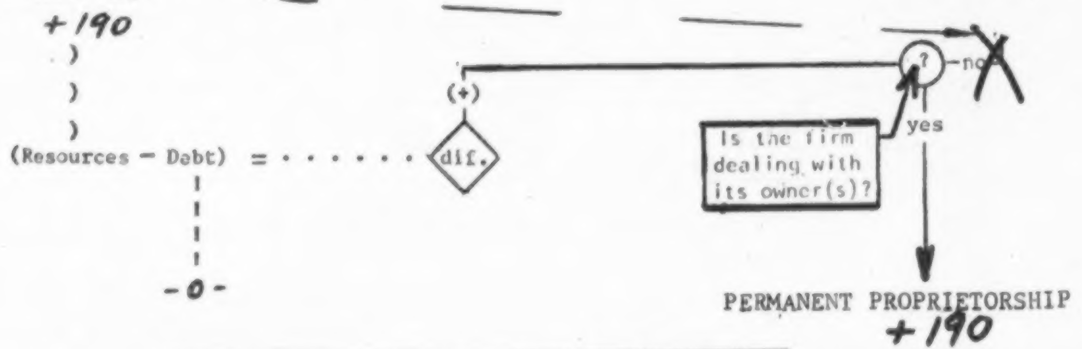
Step 6. $+ 190 ZERO ___ (✓) OR $− ___ } change in A → MINUS → change in L { ZERO ✓ (✓) OR $+ ___ $− ___

DIFFERENCE

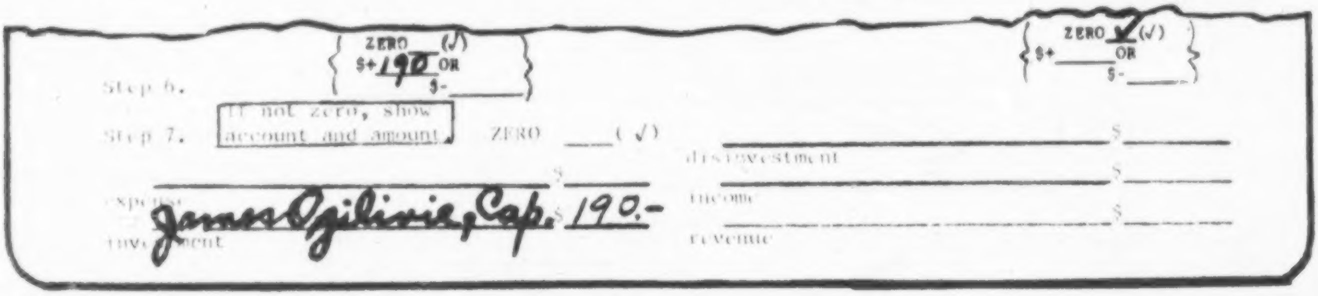
Step 7. Change in P is: ZERO ___ (✓) Plus $ 190 Minus $ ___

NO ACCOUNT TITLES required for step 7 changes.

Of course, profit is not affected by the owner's contribution. The SAME EVENT affects the model this way:


+190
(Resources − Debt) = · · · · · · dif.
-0-
(+)
?
no
yes
Is the firm dealing with its owner(s)?
PERMANENT PROPRIETORSHIP
+190

The account affected can be shown in a form which concludes (steps 6 & 7) as follows.



Step 6. { ZERO ___ (✓) $+ 190 OR $- ___ } { ZERO ✓ (✓) $+ ___ OR $- ___ }

Step 7. If not zero, show account and amount. ZERO ___ (✓)

expense ___ $___
investment James Ogilivie, Cap. $ 190.-
disinvestment ___ $___
income ___ $___
revenue ___ $___

4. Below and opposite are analyses for two more transactions. Note how each is recorded so that both sides of the ledger's equation are kept in balance.

b. Issued payroll checks totaling $895. The remainder of the $1050 which the employees had earned was withheld for payment to Internal Revenue.

Step 1. What is the entity doing? Check (✓) appropriate space(s).

a. It is a CUSTOMER dealing with a supplier of
- products(s) ___ (✓)
- services:
  - commercial ___ (✓)
  - employee ✓ (✓)
  - tax-supported ___ (✓)
- loans ___ (✓)
- other ___ (✓)

b. It is a SUPPLIER dealing with a customer for
- product(s) ___ (✓)
- service(s) ___ (✓)
- loans ___ (✓)
- other ___ (✓)

c. It is dealing with its owner ___ (✓)

Step 2. Which assets change?
CASH

Step 3. MORE or LESS
MORE	LESS
$	$ 895
$	$
$	$

From ALL of Step 3:

Step 4. Which liabilities change?
EMPLOYEE INCOME TAXES PAYABLE

Step 5. MORE or LESS
MORE	LESS
$ 155	$
$	$
$	$

From ALL of Step 5:

Step 6. $+ ___ ZERO ___ (✓) OR $– 895 } change in A ——→ MINUS ——→ change in L { ZERO ___ (✓) $+ 155 OR $– ___

DIFFERENCE

Step 7. Change in P is: ZERO ___ (✓) Plus $ ___ Minus 1050

- -

c. Collected $37, in full of the account of Spartan Bros., and a $10 advance, as well.

Step 1. What is the entity doing? Check (✓) appropriate space(s).

a. It is a CUSTOMER dealing with a supplier of
- products(s) ___ (✓)
- services:
  - commercial ___ (✓)
  - employee ___ (✓)
  - tax-supported ___ (✓)
- loans ___ (✓)
- other ___ (✓)

b. It is a SUPPLIER dealing with a customer for
- product(s) ___ (✓)
- service(s) ___ (✓)
- loans ___ (✓)
- other ✓ (✓)

c. It is dealing with its owner ___ (✓)

When you don't know what the account is for, use these.

Step 2. Which assets change?
ACCOUNTS RECEIVABLE
CASH

Step 3. MORE or LESS
MORE	LESS
$	$ 37
$ 47	$
$	$

From ALL of Step 3:

Give ONE (net) amount in step 6.

Step 4. Which liabilities change?
CUSTOMER ADVANCES

Step 5. MORE or LESS
MORE	LESS
$ 10	$
$	$
$	$

From ALL of Step 5:

Step 6. $+ 10 ZERO ___ (✓) OR $– ___ } change in A ——→ MINUS ——→ change in L { ZERO ___ (✓) $+ 10 OR $– ___

DIFFERENCE

Step 7. Change in P is: ZERO ✓ (✓) Plus $ ___ Minus $ ___

Don't forget zeroes. They're numbers, too.

5.

Step 1. (Circle a,b, or c) [✓ a. It is a CUSTOMER.] b. It is a SUPPLIER. c. It is dealing with its OWNER.

	MORE	or LESS
CASH	$	$ 895
	$	$
	$	$

ZERO ___ (✓)
$+ ___ OR
$- 895

	MORE	or LESS
EMPLOYEE INCOME TAXES PAYABLE	$ 155	$
	$	$

ZERO ___ (✓)
$+ 155 OR
$- ___

If not zero, show account and amount.

ZERO ___ (✓)

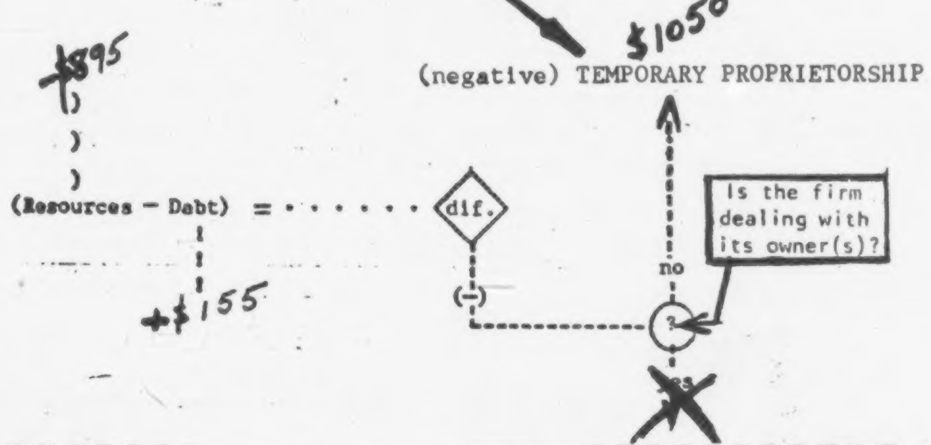
expense: Salary Expense $ 1050

investment: ___ $ ___

disinvestment: ___ $ ___

income: ___ $ ___

revenue: ___ $ ___


$1050
(negative) TEMPORARY PROPRIETORSHIP
$895
(Resources − Debt) = ...
dif.
+$155
(−)
no
?
yes
Is the firm dealing with its owner(s)?

Step 1. (Circle a, b or c) a. It is a CUSTOMER. [✓ b. It is a SUPPLIER.] c. It is dealing with its OWNER.

	MORE	or LESS
ACCOUNTS RECEIVABLE	$	$ 37
CASH	$ 47	$
	$	$

ZERO ___ (✓)
$+ 10 OR
$- ___

	MORE	or LESS
CUSTOMER ADVANCES	$ 10	$
	$	$
	$	$

ZERO ___ (✓)
$+ 10 OR
$- ___

If not zero, show account and amount.

ZERO ✓ (✓)

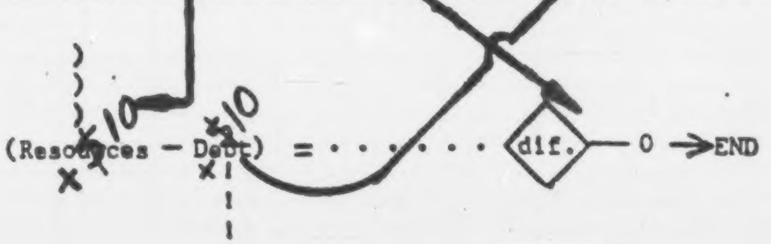
expense: ___ $ ___

investment: ___ $ ___

disinvestment: ___ $ ___

income: ___ $ ___

revenue: ___ $ ___


+10
+10
(Resources − Debt) = ...
dif.
0 → END

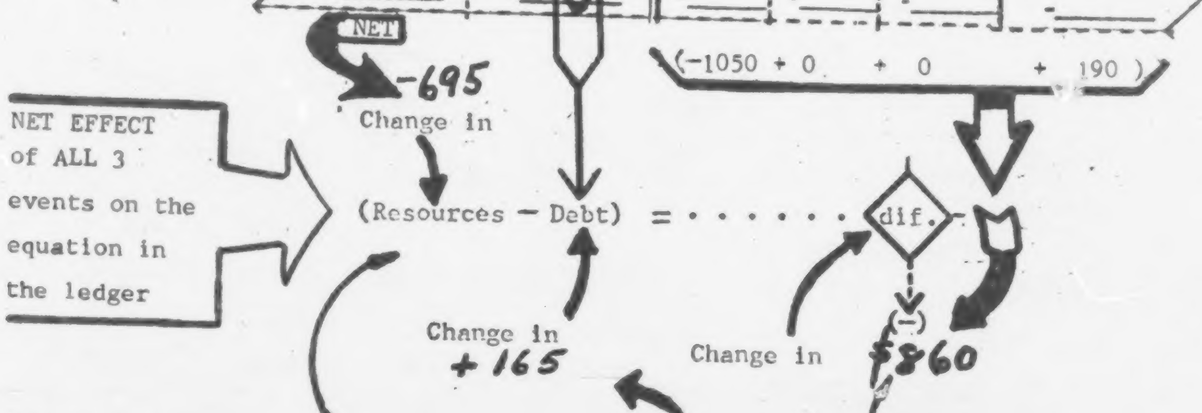
6. Here are two more forms. All three of the events analyzed before are shown in each form.

Identify the first account in each transaction by number, date, etc.

ALWAYS choose plus or minus by effect on basic equation NOT the ACCOUNT BALANCE.

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S) expense	income	revenue	Other
a. OFFICE EQUIPMENT	+ 190					
JAMES OGILIVIE CAPITAL						+ 190
b. CASH	- 895					
EMPLOYEE INCOME TAXES PAYABLE		+ 155				
SALARY EXPENSE			- 1050			
c. CUSTOMER ADVANCES		+ 10				
CASH	+ 47					
ACCOUNTS RECEIVABLE	- 37					

expense is negative change

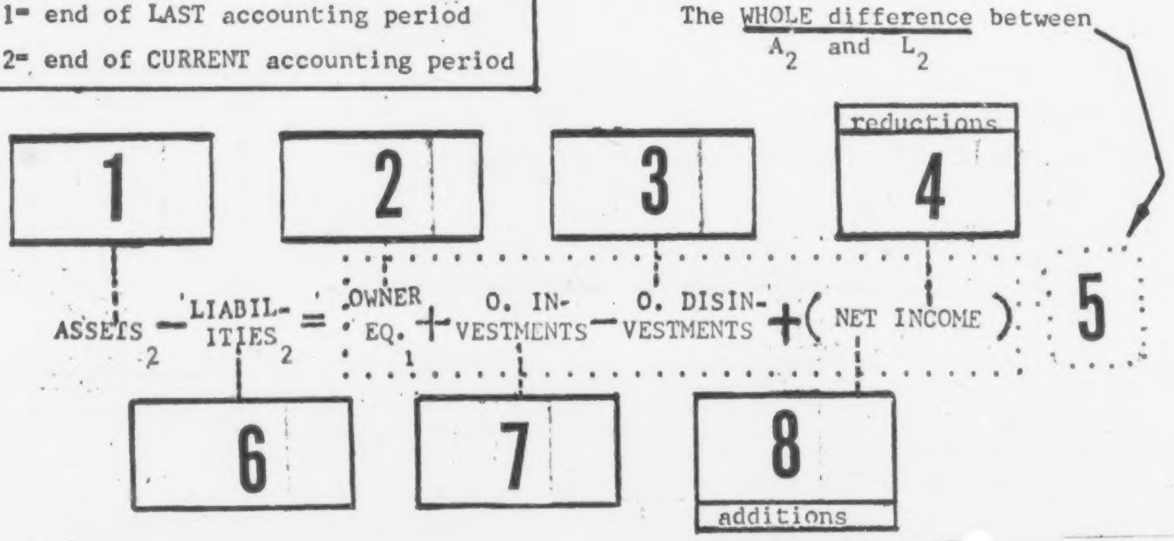

NET
-695
Change in
(−1050 + 0 + 0 + 190)
NET EFFECT of ALL 3 events on the equation in the ledger
(Resources − Debt) = · · · · · · dif.
Change in
+165
Change in
(−)
$860

Identify transactions, 1st line only

	ACCOUNT TITLES	CHANGES in ASSETS Dr	ASSETS Cr	LIABILITIES Dr	LIABILITIES Cr	Owner Equity CHANGES PROFIT ADDITIONS Dr	PROFIT ADDITIONS Cr	PROFIT REDUCTIONS Dr	PROFIT REDUCTIONS Cr	OTHER Dr	OTHER Cr
a	Office Equipment	190 00									
	James Ogilivie, Capital										
											190 00
b	Cash		895 00								
	Employee Income										
	Taxes Payable										
	Salary Expense				155 00						
								1050 00			
c	Customer Advances				10 00						
	Cash	47 00									
	Accounts Receivable		37 00								

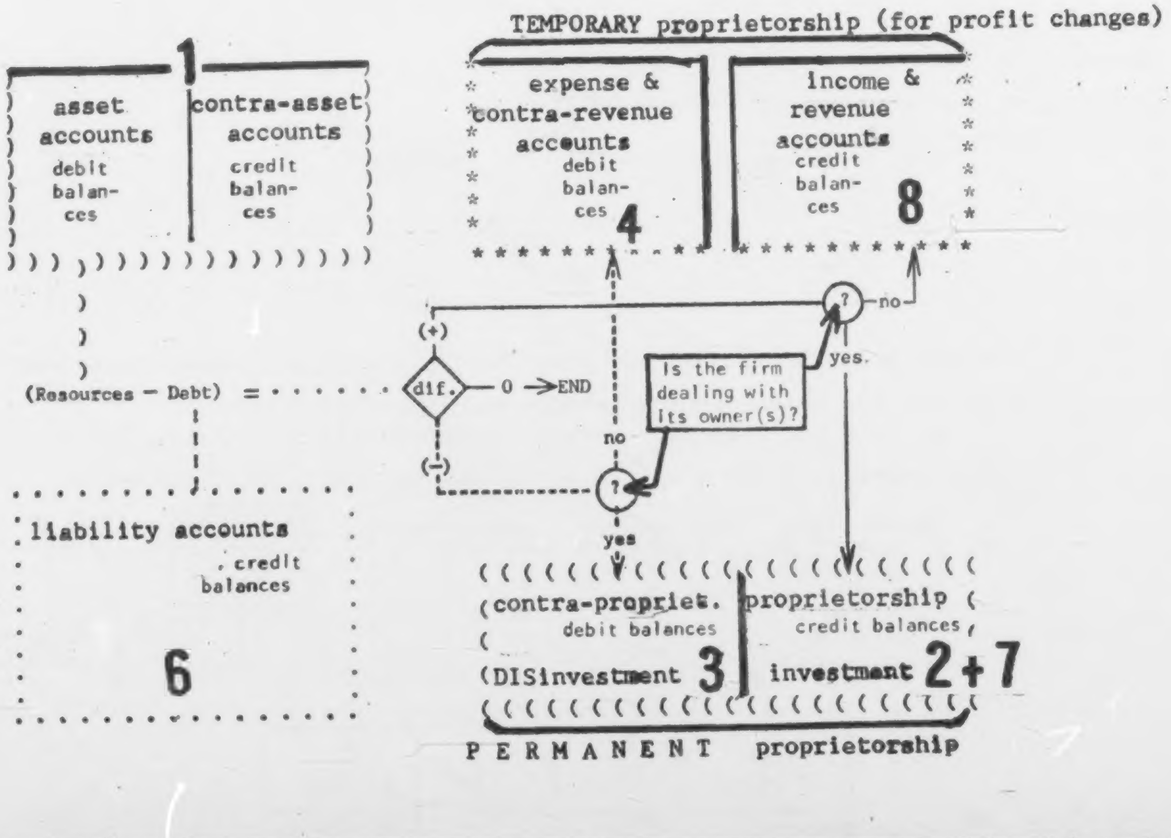
At the end of an accounting period the ledger is an equation composed of these parts.

0.= owner's
1= end of LAST accounting period
2= end of CURRENT accounting period

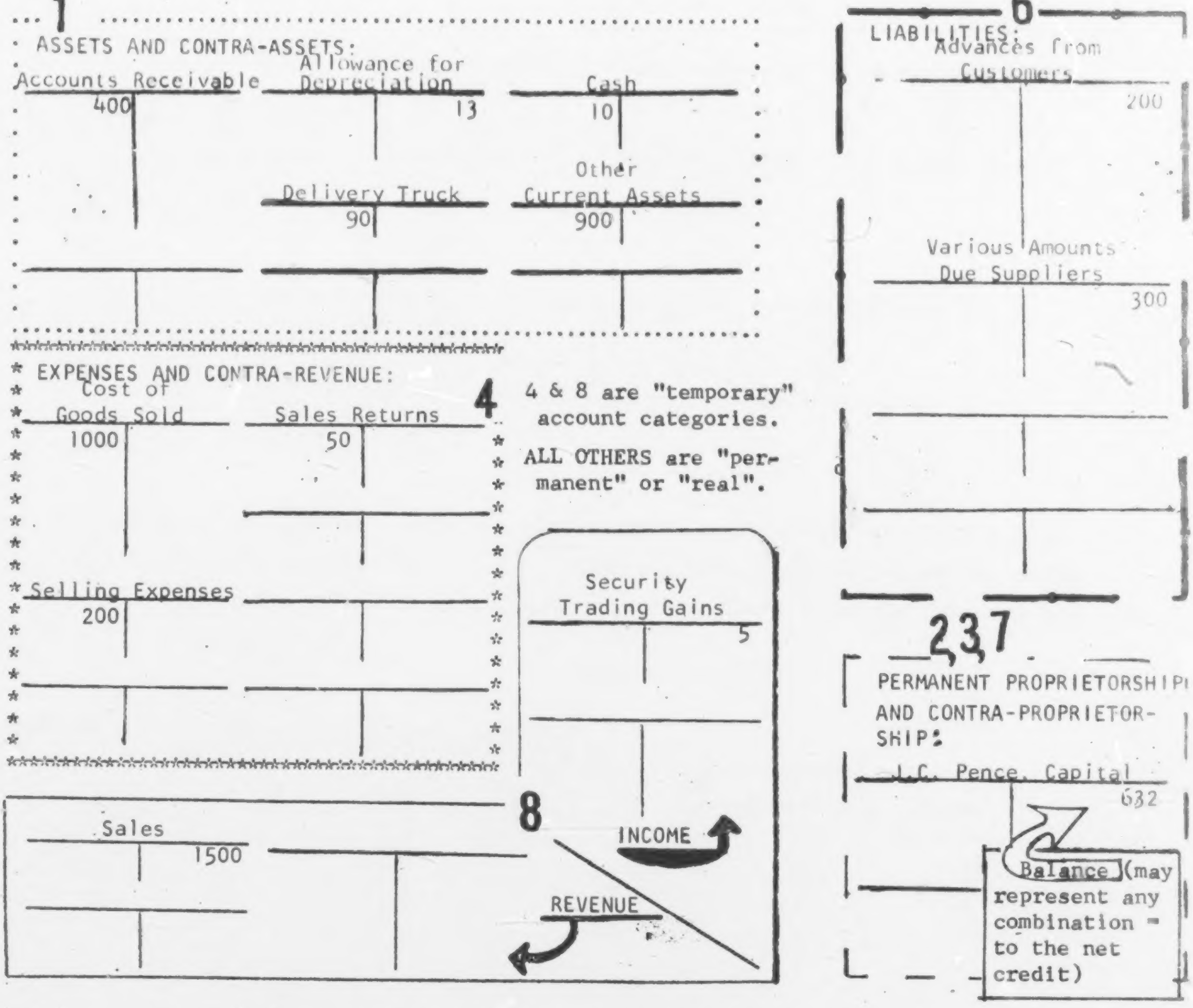

The WHOLE difference between A_2 and L_2
reductions
1
2
3
4
$ASSETS_2$ − $LIABILITIES_2$ = OWNER EQ.$_1$ + O. INVESTMENTS − O. DISINVESTMENTS + (NET INCOME)
5
6
7
8
additions

This flow-chart of the various ways a transaction may affect the difference labelled :5:, above, may be called the ACCOUNTING MODEL. It is labelled with the numbers from above to show what kinds of events affect the equation's different elements.

ACCOUNTING MODEL


TEMPORARY proprietorship (for profit changes)
1
asset accounts
debit balances
contra-asset accounts
credit balances
expense & contra-revenue accounts
debit balances
4
income & revenue accounts
credit balances
8
(Resources − Debt) =
(+)
dif.
0 → END
(−)
?
no
yes
Is the firm dealing with its owner(s)?
no
?
yes
liability accounts
credit balances
6
contra-propriet.
debit balances
DISinvestment 3
proprietorship
credit balances
investment 2+7
PERMANENT proprietorship

8. In this ledger, accounts which belong to each financial statement class are segregated according to the differences summarized in the Accounting Model.

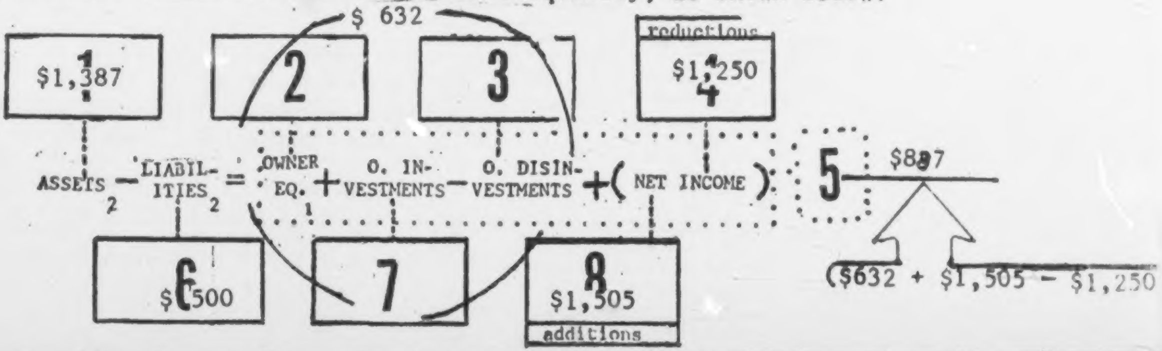

1
ASSETS AND CONTRA-ASSETS:
Accounts Receivable
400
Allowance for Depreciation
13
Cash
10
Delivery Truck
90
Other Current Assets
900
6
LIABILITIES:
Advances from Customers
200
Various Amounts Due Suppliers
300
EXPENSES AND CONTRA-REVENUE:
Cost of Goods Sold
1000
Sales Returns
50
Selling Expenses
200
4
4 & 8 are "temporary" account categories.
ALL OTHERS are "permanent" or "real".
Security Trading Gains
5
2,3,7
PERMANENT PROPRIETORSHIP AND CONTRA-PROPRIETORSHIP:
J.C. Pence, Capital
632
Balance (may represent any combination = to the net credit)
Sales
1500
8
INCOME
REVENUE

BECAUSE transaction data are consistently assigned to these categories according to:

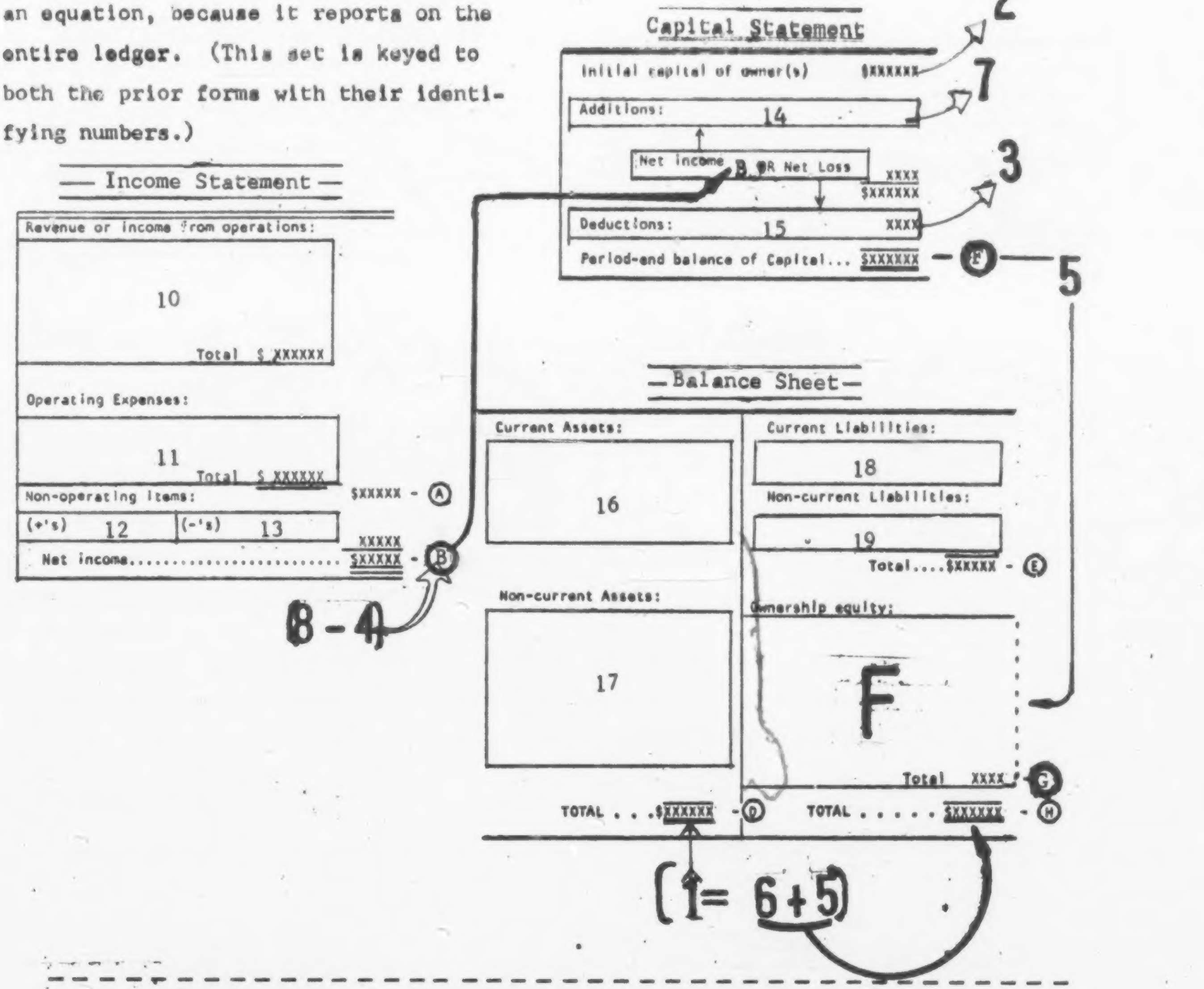
a. the definitions of assets and liabilities, and

b. the tests (+ or − ; owner or non-owner) in the flow chart,

every correct ledger will contain a true equality, as shown below.


$ 632
$1,387
1
2
3
reductions
$1,250
4
ASSETS 2
−
LIABILITIES 2
=
OWNER EQ. 1
+
O. INVESTMENTS
−
O. DISINVESTMENTS
+(
NET INCOME
)
5
$887
6
$500
7
8
$1,505
additions
($632 + $1,505 − $1,250

A complete set of financial statements is also an equation, because it reports on the entire ledger. (This set is keyed to both the prior forms with their identifying numbers.)


Capital Statement
Initial capital of owner(s) $XXXXXX
Additions: 14
Net income B OR Net Loss
XXXX
$XXXXXX
Deductions: 15 XXXX
Period-end balance of Capital... $XXXXXX - F
2
7
3
3
5
Income Statement
Revenue or income from operations:
10
Total $ XXXXXX
Operating Expenses:
11
Total $ XXXXXX
$XXXXX - A
Non-operating items:
(+'s) 12
(-'s) 13
XXXXX
Net income.......................... $XXXXX - B
8-4
Balance Sheet
Current Assets:
16
Non-current Assets:
17
TOTAL . . . $XXXXXX - D
Current Liabilities:
18
Non-current Liabilities:
19
Total....$XXXXX - E
Ownership equity:
F
Total XXXX - G
TOTAL . . . . . $XXXXXX - H
(1= 6+5)

- -

It is necessary that each transaction leave a valid equation after all its changes are included in the ledger or financial statement relationships.

The closing entry journalized, here, has the indicated effects on the ledger and report categories.

				segregated ledger
30	Real Estate Commissions Earned	9000 00		(8) - $9,500
	Gain or Loss from Security Trading	500 00		
	Salaries		3000 00	(4) + $4,850
	Rent		1000 00	
	Office Expense		800 00	
	Interest Expense		50 00	
	Retained Earnings		4650 00	(7) + $4,650
	To close for April.			0

CHANGE IN 5

(ALL pluses and minuses follow dr./cr. rules for owners' equity.)

Financial statement categories:

(10) (12) (11) (13) (B)

−$9000 − $500 + $4800 + $50 = −$4650

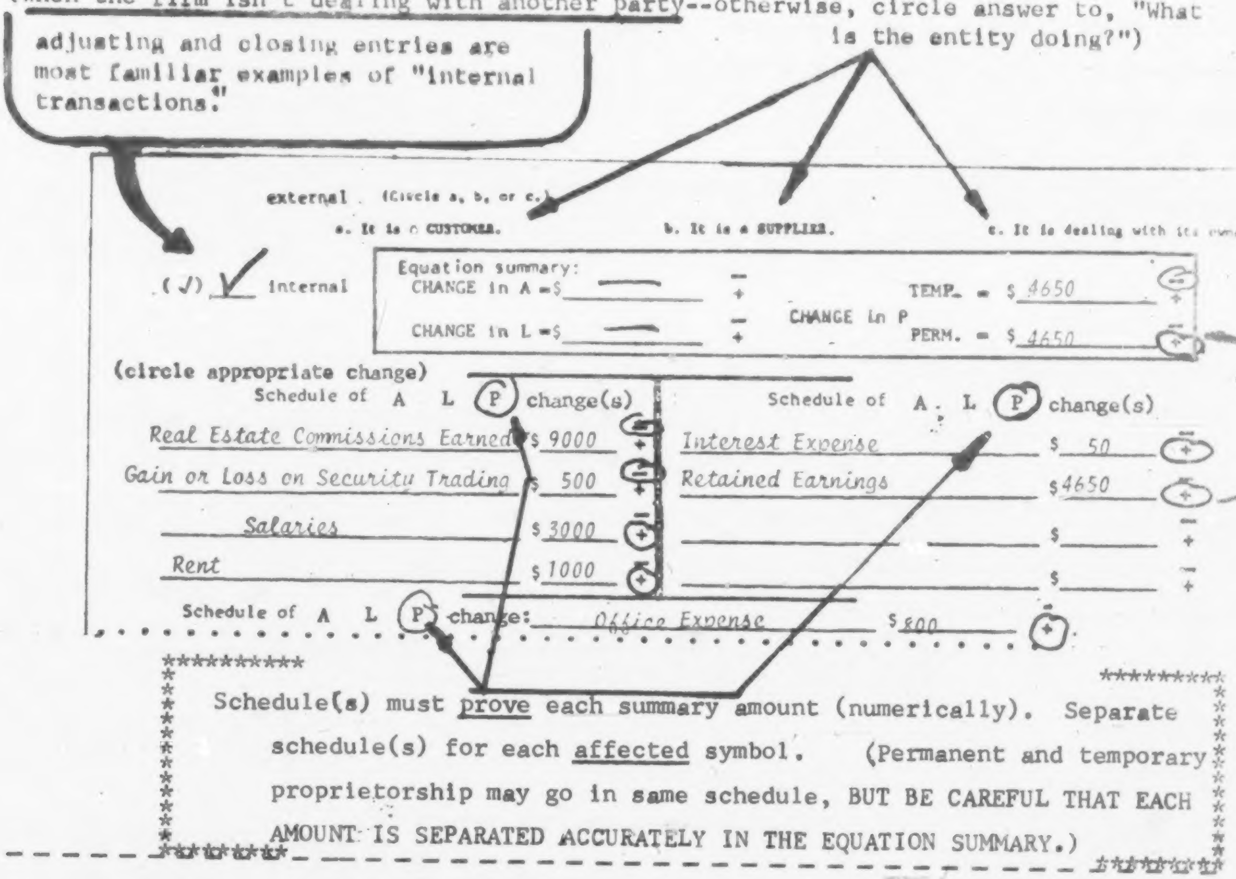
(B) (F) Change in P

−$4650 +$4650 = 0

10.

The effect of the closing entry journalized on the last page is given in this very flexible transaction analysis form.

(When the firm isn't dealing with another party--otherwise, circle answer to, "What is the entity doing?")



adjusting and closing entries are most familiar examples of "internal transactions."

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner

(✓) ✓ internal

Equation summary:

CHANGE in A = $ —— − +

CHANGE in L = $ —— − +

CHANGE in P TEMP. = $ *4650* [✓ −] +

CHANGE in P PERM. = $ *4650* − [✓ +]

(circle appropriate change)

Schedule of A L [✓ P] change(s)			Schedule of A L [✓ P] change(s)		
Real Estate Commissions Earned	$ *9000*	[✓ −] +	*Interest Expense*	$ *50*	− [✓ +]
Gain or Loss on Security Trading	$ *500*	[✓ −] +	*Retained Earnings*	$ *4650*	− [✓ +]
Salaries	$ *3000*	− [✓ +]		$	− +
Rent	$ *1000*	− [✓ +]		$	− +

Schedule of A L [✓ P] change: *Office Expense* $ *800* − [✓ +]

Schedule(s) must prove each summary amount (numerically). Separate schedule(s) for each affected symbol. (Permanent and temporary proprietorship may go in same schedule, BUT BE CAREFUL THAT EACH AMOUNT IS SEPARATED ACCURATELY IN THE EQUATION SUMMARY.)

These journalized transactions serve as the basis of the analyses on the next page.

a.	Accounts Payable		40 00	
	Notes Payable			40 00
	Issued note to defer payment of balance due Moishe Dyan.			

b.	Cost of Goods Sold		410 00	
	Purchases Returns		20 00	
	Merchandise Inventory		80 00	
	Purchases			500 00
	Freight on Purchases			10 00
	To adjust for goods sold during the period. Ending mdse. on hand, $200, has increased $80.			

c.	Land		800 00	
	Buildings		4000 00	
	Mortgage Payable			4300 00
	Cash			500 00
	Assumed mortgage for excess of $500 down-payment in purchase of Land and Buildings.			

. . . .

a. external (Circle a, b, or c.)

[✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(When account changes cancel out)

(✓) ___ internal

Equation summary:

CHANGE in A = $ — − +

CHANGE in L = $ 0 − +

CHANGE in P TEMP = $ — − +

CHANGE in P PERM. = $ — − +

(When no accounts are affected)

(circle appropriate change)

Schedule of A [✓ L] P change(s)

Accounts Payable	$ 40.00	[✓ −] +
Notes Payable	$ 40.00	− [✓ +]

Schedule of A L P change(s) ___ $ ___ − +

Schedule of A L P change: ___ $ ___ − +

. . . .

Solution is impossible if it doesn't balance.

One or more schedules for each affected SYMBOL in the summary.

b. external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ✓ internal

adjustment

Equation summary:

CHANGE in A = $ 410 [✓ −] +

CHANGE in L = $ — − +

CHANGE in P TEMP. = $ 410 [✓ −] +

CHANGE in P PERM. = $ — − +

(circle appropriate change)

Schedule of [✓ A] L P change(s)

Purchases Returns	$ 20	− [✓ +]
Merchandise Inventory	$ 80	− [✓ +]

Schedule of [✓ A] L P change(s)

Purchases	$ 500	[✓ −] +
Freight on Purchases	$ 10	[✓ −] +

Schedule of A L [✓ P] change: Cost of Goods Sold $ 410 [✓ −] +

(proprietorship change is negative)

(a plus, for expense, won't balance the equation)

. . . .

A	- L	= P
$4300	$4300	$0

(always make sure)

. . . .

c. external (Circle a, b, or c.)

[✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ___ internal

Equation summary:

CHANGE in A = $ 4300 − [✓ +]

CHANGE in L = $ 4300 − [✓ +]

CHANGE in P TEMP. = $ — − +

CHANGE in P PERM. = $ — − +

(circle appropriate change)

Schedule of [✓ A] L P change(s)

Cash	$ 500	[✓ −] +
Land	$ 800	− [✓ +]

Schedule of A [✓ L] P change(s)

Mortgage Payable	$ 4300	− [✓ +]
	$	− +

Schedule of [✓ A] L P change: Buildings $ 4000 − [✓ +]

. . . .

ON THE NEXT PAGE are three forms of analysis for this transaction:

Don Ho entered the fertilizer business by acquiring the real estate ($3000) and supplies ($200) of a retiree. He also agreed to settle the unpaid taxes ($400), when due.

12.

DR. changes	CR. changes
d) Land & Bldgs. $3000	
Supplies, $200	

(Enter & LABEL acct. titles & amounts for EACH event's drs. & crs.)

DR. changes	CR. changes

(FUTURE services − Debt) = plus/minus/zero → END

no ? yes

"Dealing with an OWNER ?" ? no yes

DR. changes	CR. changes
	d) Taxes Pay. $400

DR. changes	CR. changes
	d) Don Ho, Capital $2800

Note different locations--same summary information

Titles for asset changes?	MORE	or LESS
Land & Bldgs.	$3000	$
Supplies	$ 200	$
	$	$

From ALL of Step 3:

Titles for liability changes?	MORE	or LESS
Taxes Payable	$ 400	$
	$	$
	$	$

From ALL of Step 5:

$+ 3200 ZERO ___ (✓) OR $− } change in A → MINUS → change in L { $+ 400 ZERO ___ (✓) OR $−

DIFFERENCE

Change in P is: ZERO ___ (✓)

PLUS $ 2800

MINUS $ ______

Is transaction with OWNER(S) of this firm?

(no) income (title)

(no) revenue (title)

(no) expense (title)

(no) contra- (title) income OR revenue

(yes) Don Ho, Capital Investment (title)

(no) (yes) DISinvestment (title)

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. [✓ c.] It is dealing with its owner.

(✓) ___ internal

Equation summary:

CHANGE in A = $ 3200 − [✓ +]

CHANGE in L = $ 400 − [✓ +]

CHANGE in P TEMP. = $ ______ − +

CHANGE in P PERM. = $ 2800 − [✓ +]

(circle appropriate change)

Schedule of [✓ A] L P change(s)

Land & Buildings	$3000	− [✓ +]
Supplies	$ 200	− [✓ +]

Schedule of A [✓ L] P change(s)

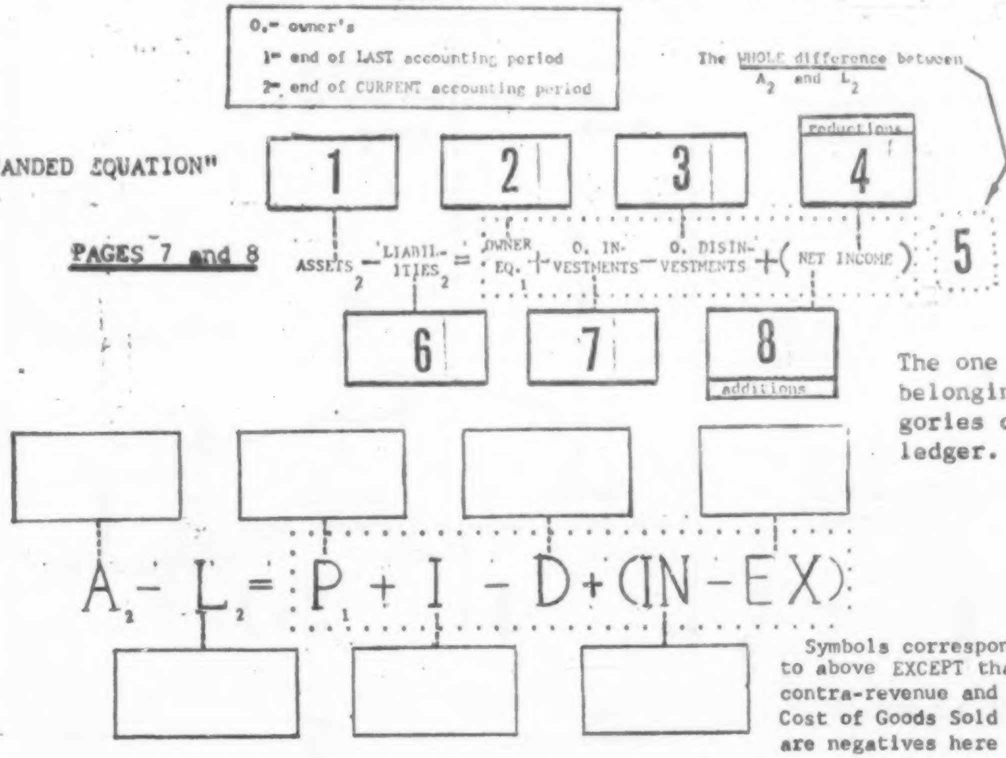
Taxes Payable	$400	− [✓ +]
	$	− +

Schedule of A L [✓ P] change: Don Ho, Capital $ 2800 − [✓ +]

INDEX to green pages. PAGE references are to illustrations of use.
(CAUTION: other instructions may call for use NOT illustrated.)

"EXPANDED EQUATION"

PAGES 7 and 8


O,= owner's
1= end of LAST accounting period
2= end of CURRENT accounting period
The WHOLE difference between A_2 and L_2
reductions
1
2
3
4
5
ASSETS$_2$ − LIABILITIES$_2$ = OWNER EQ.$_1$ + O. INVESTMENTS − O. DISINVESTMENTS + (NET INCOME)
6
7
8
additions
$A_2 - L_2 = P_1 + I - D + (IN - EX)$

The one or more accounts belonging to these categories comprise the entire ledger.

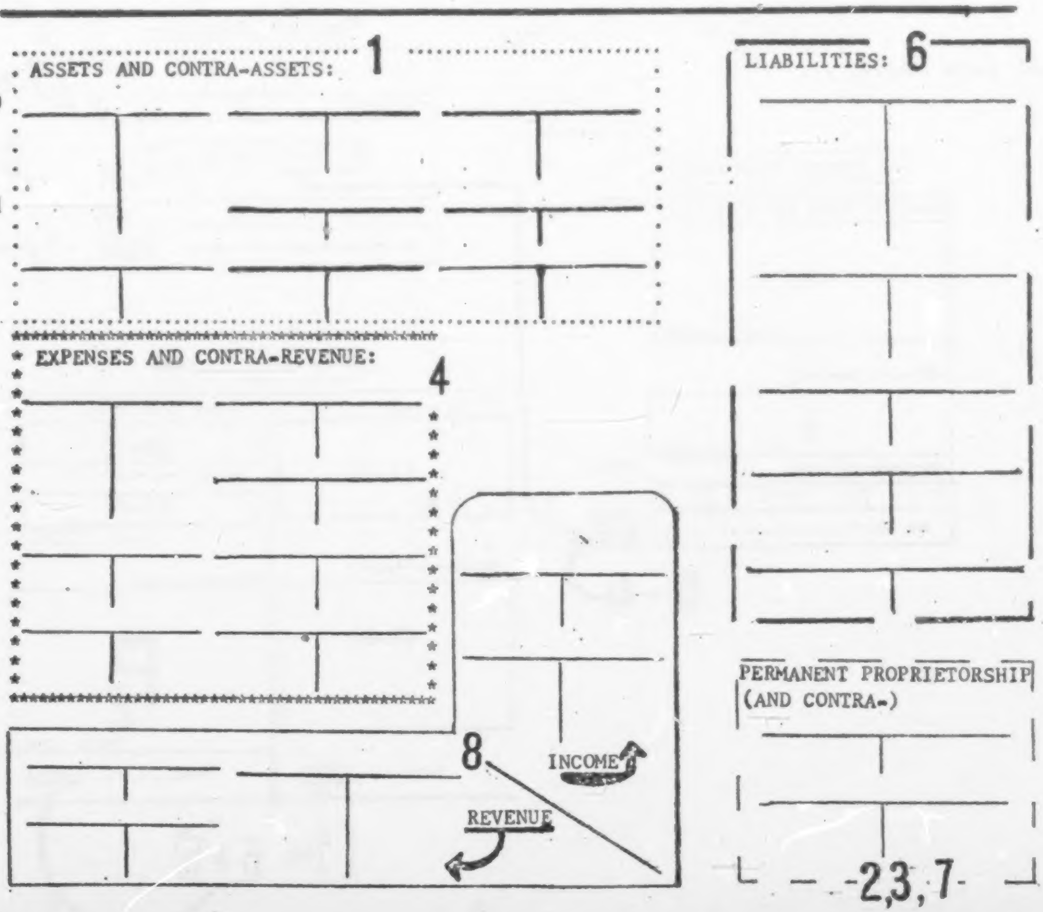
Symbols correspond to above EXCEPT that contra-revenue and Cost of Goods Sold are negatives here

(i.e. IN for a merchandiser is gross margin plus nonoperating income or revenue).

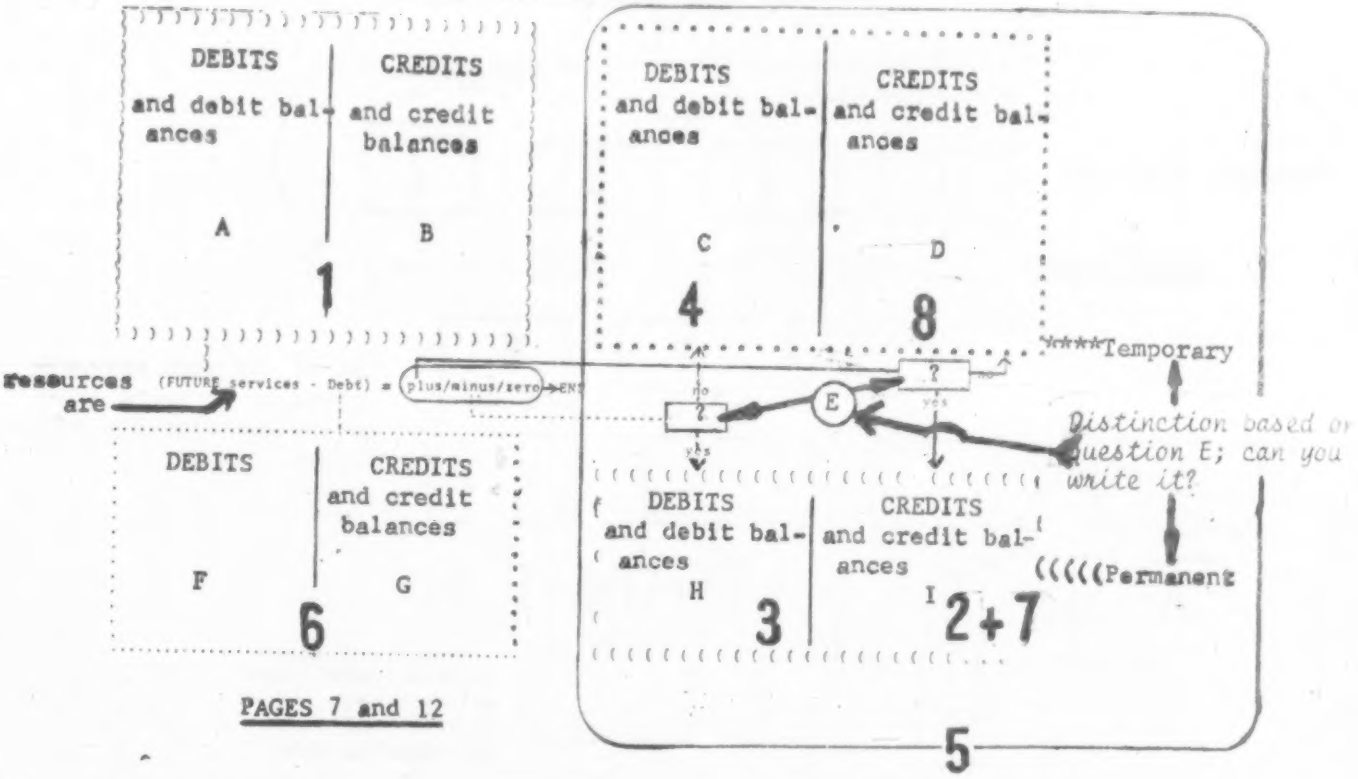
"SEGREGATED LEDGER"

numbers correspond to first form.

PAGE 8


ASSETS AND CONTRA-ASSETS: 1
LIABILITIES: 6
EXPENSES AND CONTRA-REVENUE: 4
PERMANENT PROPRIETORSHIP (AND CONTRA-)
8
INCOME
REVENUE
-2,3,7-

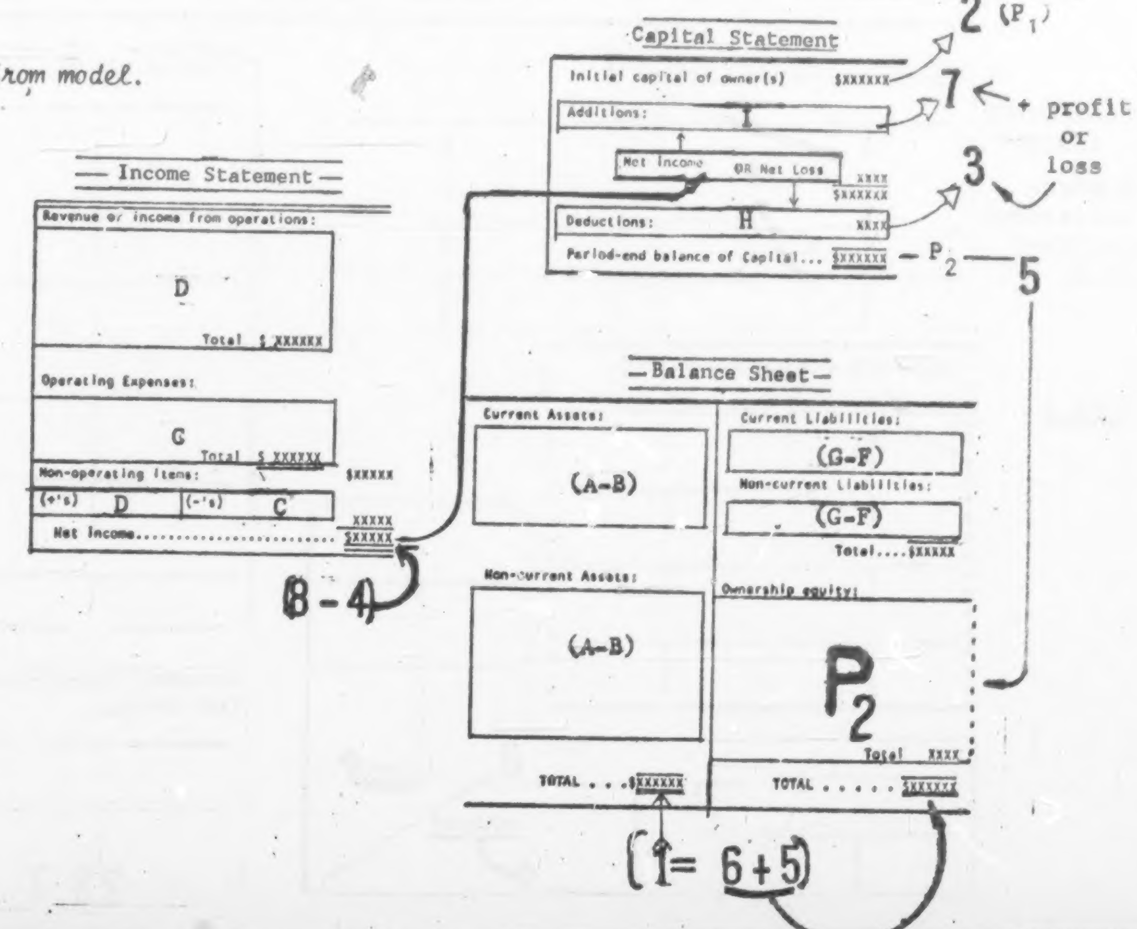
ACCOUNTING MODEL


DEBITS
and debit balances
A
CREDITS
and credit balances
B
1
DEBITS
and debit balances
C
4
CREDITS
and credit balances
D
8
Temporary
resources are
(FUTURE services - Debt) = plus/minus/zero
?
no
yes
E
Distinction based on question E; can you write it?
DEBITS
F
CREDITS
and credit balances
G
6
DEBITS
and debit balances
H
3
CREDITS
and credit balances
I
2+7
Permanent
5

PAGES 7 and 12

Letters are from model.

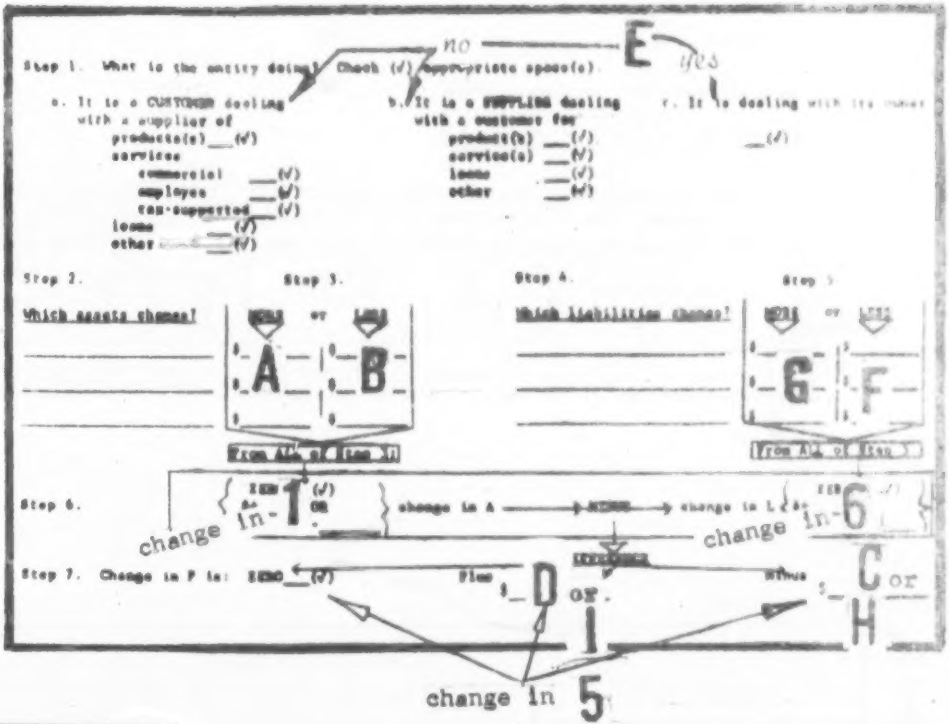
PAGE 9


Capital Statement
Initial capital of owner(s) $XXXXXX
2 (P1)
Additions: I
7
+ profit or loss
Net Income OR Net Loss XXXX
$XXXXXX
Deductions: H XXXX
3
Period-end balance of Capital... $XXXXXX
P2
5
Income Statement
Revenue or income from operations:
D
Total $ XXXXXX
Operating Expenses:
G
Total $ XXXXXX
$XXXXX
Non-operating items:
(+'s) D
(-'s) C
XXXXX
Net Income.......... $XXXXX
(8-4)
Balance Sheet
Current Assets:
(A-B)
Current Liabilities:
(G-F)
Non-current Liabilities:
(G-F)
Total....$XXXXX
Non-current Assets:
(A-B)
Ownership equity:
P2
Total XXXX
TOTAL . . . $XXXXXX
TOTAL . . . . . $XXXXXX
(1= 6+5)

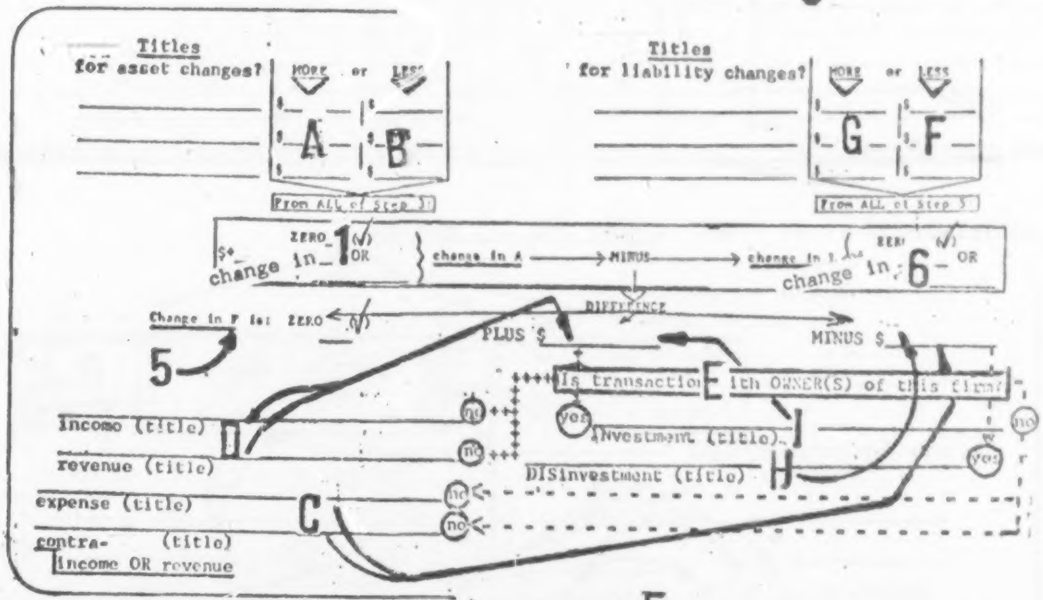
TRANSACTION ANALYSIS FORMS

(etters designate kinds of change shown in the model, page 14)

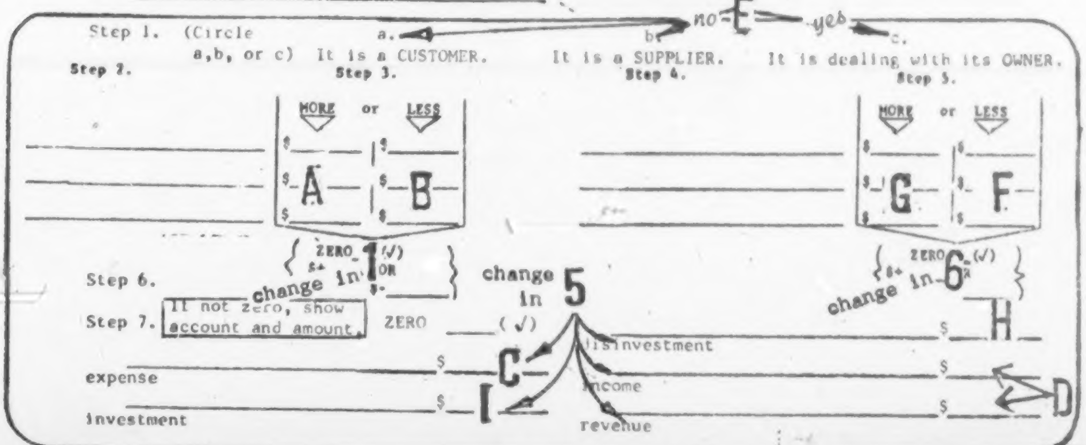
PAGES 3 & 4


Step 1. What is the entity doing? Check (✓) appropriate space(s).
no
E
yes
a. It is a CUSTOMER dealing with a supplier of
products(s) __(✓)
services
commercial __(✓)
employee __(✓)
tax-supported __(✓)
loans __(✓)
other __(✓)
b. It is a SUPPLIER dealing with a customer for
product(s) __(✓)
service(s) __(✓)
loans __(✓)
other __(✓)
c. It is dealing with its owner
__(✓)
Step 2.
Which assets change?
Step 3.
MORE or LESS
A
B
From ALL of Step 3
Step 4.
Which liabilities change?
Step 5
MORE or LESS
G
F
From ALL of Step 5
Step 6.
ZERO (✓) OR
change in 1
change in A
MINUS
change in L
change in 6
DIFFERENCE
Step 7. Change in P is: ZERO __(✓)
Plus $_ D or I
Minus $_ C or H
change in 5

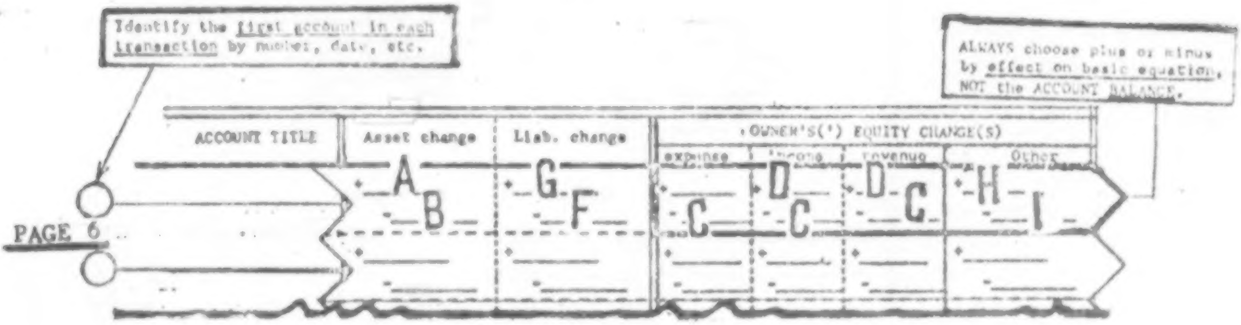
PAGE 12

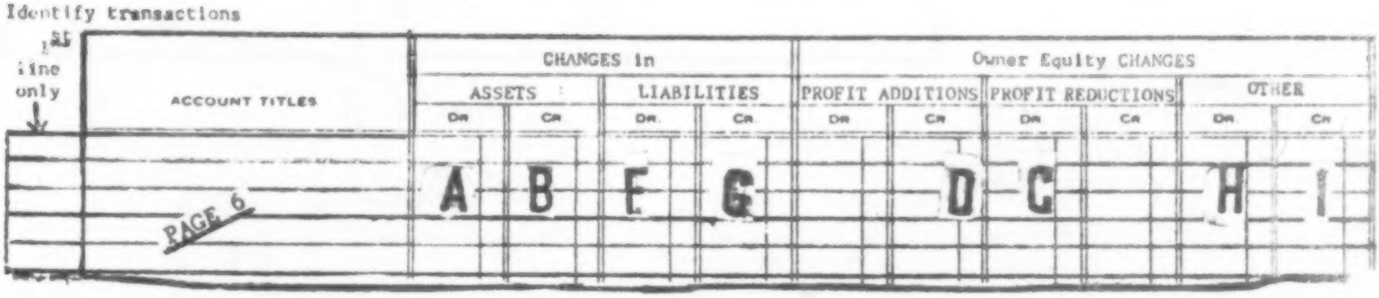

Titles for asset changes?
MORE or LESS
A
B
From ALL of Step 3
Titles for liability changes?
MORE or LESS
G
F
From ALL of Step 5
$+ ZERO (✓) OR
change in 1
change in A
MINUS
change in L
change in 6
ZERO (✓) OR
DIFFERENCE
Change in P is: ZERO (✓)
5
PLUS $
MINUS $
Is transaction E ith OWNER(S) of this firm?
no
yes
no
yes
income (title)
D
revenue (title)
no
INvestment (title)
I
DISinvestment (title)
H
expense (title)
C
no
contra- (title)
no
income OR revenue

PAGE 5

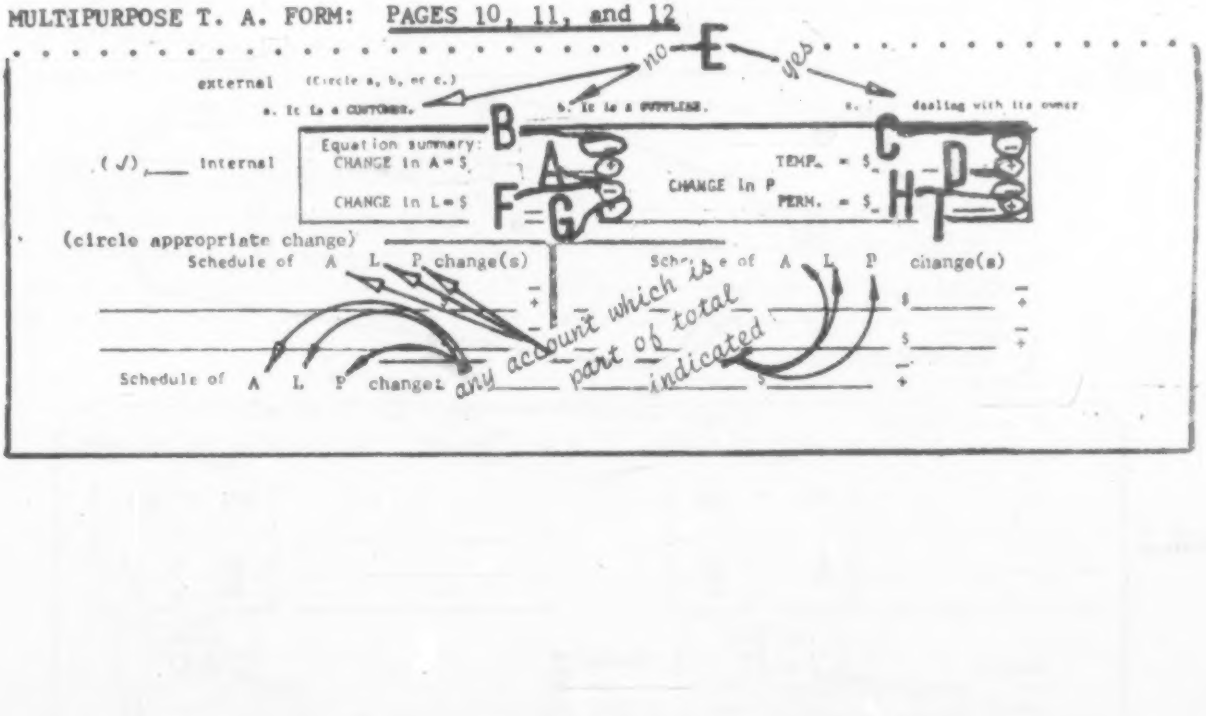

Step 1. (Circle a,b, or c)
a. It is a CUSTOMER.
no
E
yes
b. It is a SUPPLIER.
c. It is dealing with its OWNER.
Step 2.
Step 3.
MORE or LESS
A
B
Step 4.
Step 5.
MORE or LESS
G
F
Step 6.
ZERO (✓) $+ OR $-
change in 1
change in 5
ZERO (✓)
change in 6
Step 7.
If not zero, show account and amount.
ZERO ____ (✓)
DISinvestment
H
expense
C
income
D
investment
I
revenue

COLUMNAR TRANSACTION ANALYSIS FORMS:


Identify the first account in each transaction by number, date, etc.
ALWAYS choose plus or minus by effect on basic equation, NOT the ACCOUNT BALANCE.
ACCOUNT TITLE
Asset change
Liab. change
OWNER'S(') EQUITY CHANGE(S)
expense
income
revenue
Other
PAGE 6
A
B
G
F
C
D
C
D
C
H
I


Identify transactions
1st line only
ACCOUNT TITLES
CHANGES in
ASSETS
LIABILITIES
Owner Equity CHANGES
PROFIT ADDITIONS
PROFIT REDUCTIONS
OTHER
DR
CR
PAGE 6
A
B
F
G
D
C
H
I

MULTIPURPOSE T. A. FORM: PAGES 10, 11, and 12


E
no
yes
external (Circle a, b, or c.)
a. It is a CUSTOMER.
b. It is a SUPPLIER.
c. dealing with its owner
(✓), internal
Equation summary:
CHANGE in A = $
CHANGE in L = $
CHANGE in P
TEMP. = $
PERM. = $
B
A
F
G
C
D
H
I
(circle appropriate change)
Schedule of A L P change(s)
Schedule of A L P change(s)
any account which is part of total indicated

FOLLOW THESE DIRECTIONS, carefully.

What time is it? (Make a note.) Report the time you actually spend working on the lesson in the space provided on the gripe sheet.

You will be given information, asked questions, or asked to follow instructions. The instructions appear as needed.

In most, but not all cases, you will be given "feedback" on your responses. Look for these answers; and, if you didn't agree, re-examine the frame. If you still don't understand, make a note to ask your instructor.

In any case, make an X on the "gripe sheet" (back of this page, and the next) in the space for any part of a frame you missed. These deserve special review.

When more than one frame appears on a page, a cover sheet should be used to hide the answers until you've made yours. If you fold the gripe sheets horizontally (at the dotted line) they will serve the purpose. On page 1, this ▽ shows where the top should go.

Give your answer to frame 1 before uncovering the answer.

Go on with the lesson.

TOTAL time to complete → (minutes) ________ NAME ____________________

RESPONSES I MISSED (Place an X beside the specific part.)

Please attach comments and suggestions, identifying item; or put them beside the frame. Put a "C" here. Leave wrong response in frame.

1. ____

2. I. ____ ____ ____

____ ____ ____

II. ____

3. A ____

B ____

C ____

4. A ____

B 1. ____

2. ____ C. ____

5. A. ____ B. ____ C. ____

6. A. (write no., if error) → ____

B. ____

7. A. ____

____

B. ____

8. ____

9. a. ____ b. ____

10. ____ ____

____ ____

11. Did change 10? ____ yes

12, a. ____ b. ____

c. ____ d. ____

e. ____

f. ____ g. ____

13. 1st pair ____

2nd pair ____

3rd pair ____

14. A.

B.

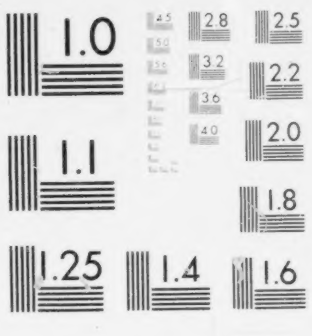
(✓)

(title)

fold

3 OF 5

ED 082 291


1.0
4.5
5.0
5.6
6.3
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

15. ______

16. ______

______

______

17. a. ____ b. ____

c. ____ d. ____

e. ____ f. ____

g. ____ h. ____

18. ______

19. 1. ______

3. ______

20. A. ______

B. ______

C. ______

21. 1. ______

2. ______

22. 1. ______

2. ______

3. ______

23. 1. ______ 3. ______ 5. ______

2. ______ 4. ______ 6. ______

24. a. ______

b. ______

c. ______

d. ______

25. 1. ______

2. ______

3. ______

26. (1) ______

(2) ______

(3) $ ______ ____

$ ______ ____

27. I. 1st ______ 2nd ______

______

II. ______

III. ______

______

28. a. ______

b. ______

3

29. a.____ ____(%)

b.____

____

____

____

30. a b c d (X letter, if error)

2. ____ ____ ____

31. (correct or correction) (why?)

(A) ____ ____

(B) ____ ____

(C) ____ ____

(D) ____ ____

(E) ____ ____

(F) ____ ____

(G) ____ ____

(H) ____ ____

(I) ____ ____

(J) ____ ____

32. (A) 1)____ 2)____ 3)____

33. (B) 1)____ 2)____

34. ____

____

____

35. 1. ____

2. ____

36. 1. ____

2. ____

3. ____

37. ____

38. (1) A. ____

B. ____

(2) A. ____

B. ____

C. ____

(3) ____

(4) ____

(5) ____

BAD DEBTS

An overview of the problem

1. Here is a typical journal entry for a credit sale to a customer.

	14	*Accounts Receivable*		200 00	
		Sales			200 00
		Sale to Charlie Chan; terms 2/10, n/30.			

However, if the firm can not collect the receivable, it really received nothing in exchange for its merchandise.

> (Although no firm will extend credit to any customer who is certain not to pay, it will use a credit policy which it knows will allow more charge accounts than it can collect in full.)

Thus, a few times each period, credit sales to (unidentified) customers will be recorded, despite the fact that no future benefit was acquired.

How does this cause the ledger to be misleading?

The debit to Accounts Receivable overstates assets. (An uncollectible receivable will provide no money with which to buy future services.)

The credit to Sales

(Check one, if correct, OR you write the true effect.)

___(√) understates assets.
___(√) overstates liabilities.
___(√) overstates profits.

____

COVER the page below this line. ▽

Slide cover down after you answer.

- -

Sometimes the answer will appear beside the next frame (in a column like this). →

1. _✓_ overstates profits

Otherwise, it will use the whole width of the page, like this:

ANS. 1. Profits are overstated.

(You should have checked, "overstates profits". However, if you wrote, "overstates revenue", you have made a true statement, and doubtless know that net income will be overstated, too. You need to recognize that you were asked to describe the effect only if the listed ones were all INcorrect. Since "profits" is a synonym for "net income", of course, it would also be true, but unnecessary, to write, "overstates net income".)

NOW, remove the PINK panel, and GO ON WITH THE NEXT RIGHT-HAND page (2).

Use *only* the right-hand pages (and ignore the left) until you are instructed further.

PANEL A

"Bad Debts" was debited $10. As debits to "Sales Returns" compensate for credits to Sales which are cancelled, this debit cancells profit-additions recorded when no real additions to profits occurred.

Boggstown Grocery Co.
Income Statement
Year Ended December 31, 1970

Revenue:			
Gross Sales		$2000	
Less: Bad Debts	$10		
Sales Returns	50	60	
Net Sales			$1940
Cost of Sales:			
Inventory, January 1		200	
Purchases		880	
		$1080	
Inventory, December 31		350	
Cost of Sales			730
Gross Margin on Sales			$1210
Operating Expenses:			
Selling Expenses:			
Advertising	$102		
Depreciation - Store Fixtures	40		
Rent	60		
Salaries	480	$682	
General and Administrative Expense		316	
Total Operating Expenses			998
Net Income from Operations			$ 212
Less: Interest Expense			12
Net Income			$ 200

The report reveals how much of the Sales made in 1970 did NOT add to net income, in fact.

"Allowance for Bad Debts" was credited $10 (bringing its balance to $15).

Boggstown Grocery Co.
Balance Sheet
December 31, 1970

Assets		
Current Assets:		
Cash	$550	
Petty Cash	50	
Accounts Receivable	$615	
Less: Allowance for Bad Debts	15	
Accounts receivable (net)	600	
Merchandise	350	$1550
Non-current Assets:		
Store Fixtures	$170	
Less: Accumulated Depreciation	45	125
Total Assets		$1675
Liabilities and Net Worth		
Current liabilities:		
Accounts payable	$500	
Advances from Customers	100	
Total liabilities		$ 600
Net Worth:		
Stockholders' equity		1075
Total liabilities and net worth		$1675

The report "says",

Customers have promised to pay us this much.

BUT, we must make allowance for not being able to collect them all.

This is our best estimate of the VALID promises, which are the only assets.

2. Before the statements of the Boggstown Grocery Co. (pink PANEL A) were made, it recorded an adjusting entry to correct for having sometimes overstated assets and profits.

Examine Panel A.

Both accounts in the adjustment are "contra" accounts. All contra-accounts, you should recall, are used to record (separately) reductions which apply to one (or a few) specific account(s).

For example, the illustrated Balance Sheet includes the contra-asset, "Accumulated Depreciation" * which is a decrease in "Store Fixtures". BOTH accounts make up the record of that particular asset.

However, contra-asset is NOT another term for "liability." Liabilities are subtracted from "Total Assets" in the basic equation (to compute proprietorship, owner's equity, net worth, etc.) but not from individual asset accounts.

I. From the way these accounts affect the reports, match (by letter) the titles of the accounts with the statement, class, and normal balance of each.

Account titles:
A. Allowance for Bad Debts
B. Bad Debts

(You fill the other blanks.)

	Statement		Class		Normal Balance
a	Balance Sheet	____	contra-asset	____	debit
B	Income Statement	____	contra-revenue	____	credit

II. From the nature of the information each statement reports, indicate which account

_______ improves a value which is true at one moment

_______ improves an amount which pertains to change between two moments.

SAVE Panel A.

Remove the YELLOW panel (next page) and continue.

---

* It "allows for" the fact that Store Fixtures are not new. You probably know that "Allowance for Depreciation" is a synonymous title.

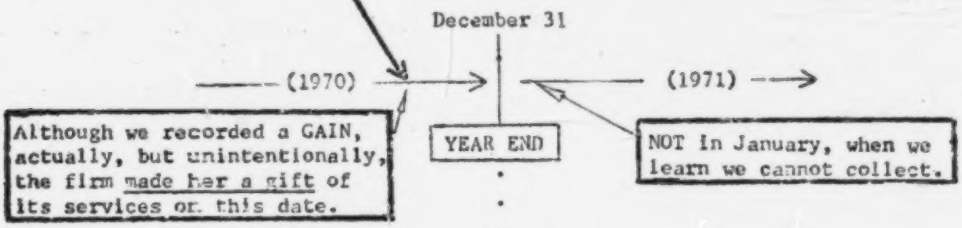
PANEL C

TIMELY AND UNTIMELY PROFIT-REPORTING

EXAMPLE: Of course, merchandisers are not the only ones to have uncollectible receivables.

Adette Orr, a customer, employed our maintenance firm to do her fall housecleaning, taking advantage of a "pay after the New Year" offer. On January 5 she died, leaving no estate. Although she had always intended to pay, she had not (and no one does).

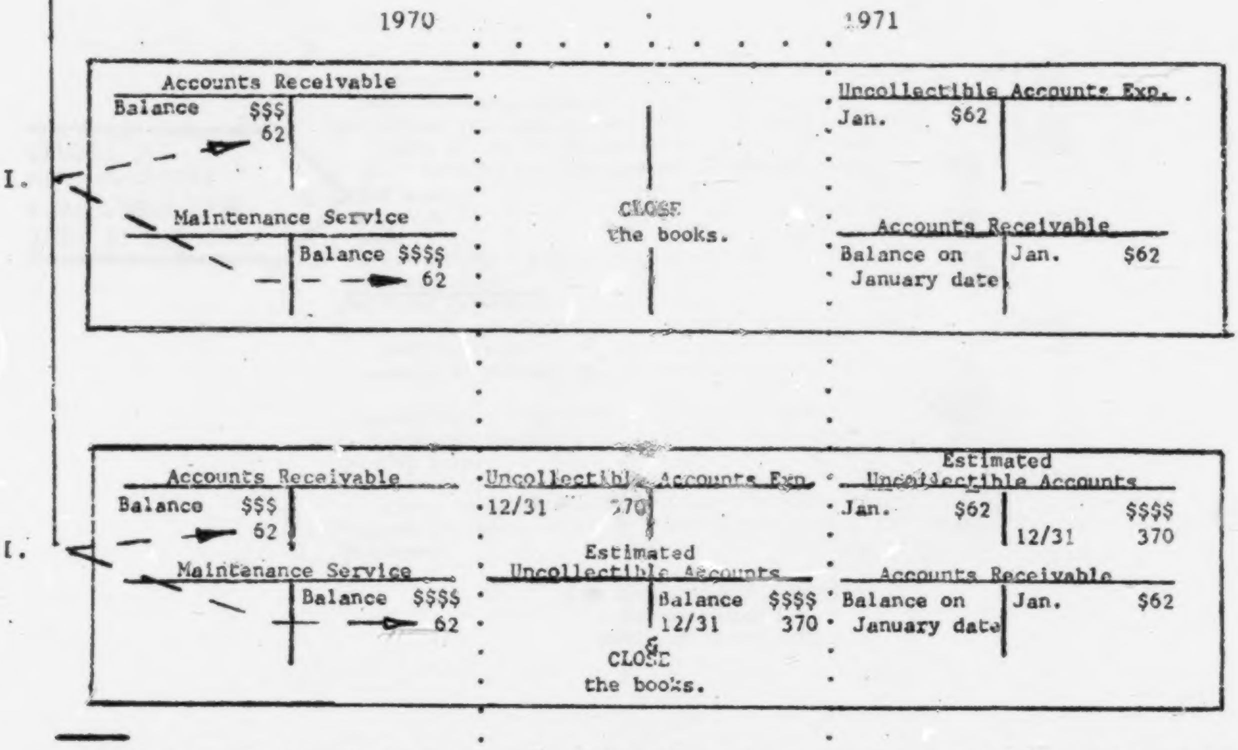
Since the firm cannot use her good intentions, her promise was no asset. However, we debited Accounts Receivable and recorded an addition to profits, about here,


December 31
(1970)
(1971)
YEAR END

Although we recorded a GAIN, actually, but unintentionally, the firm made her a gift of its services on this date.

NOT in January, when we learn we cannot collect.

Beginning on the date Adette was billed, the poorer of these two sets of transactions will have to be recorded IF the better timing* is avoided.


1970
1971
I.
Accounts Receivable
Balance $$$
62
Maintenance Service
Balance $$$$
62
CLOSE the books.
Uncollectible Accounts Exp.
Jan. $62
Accounts Receivable
Balance on January date
Jan. $62
II.
Accounts Receivable
Balance $$$
62
Maintenance Service
Balance $$$$
62
Uncollectible Accounts Exp.
12/31 370
Estimated Uncollectible Accounts
Balance $$$$
12/31 370
CLOSE the books.
Estimated Uncollectible Accounts
Jan. $62
$$$$
12/31 370
Accounts Receivable
Balance on January date
Jan. $62

---

* "Proper matching" of each year's positive and negative profit-changes. Specifically, for "credit losses" it is making sure that none of the "expense" of NOT collecting is reported in a period other than when a revenue overstatement was recorded along with the uncollectible receivable.

ANSWER 2.

The one when reported.

	Statement	Class	Normal Balance
I.	a Balance Sheet	a contra-asset	B debit (opposite of Sales)
	B Income Statement	B contra-revenue	a credit (opposite of assets)

II. a (the asset at the close of 12/31/70)
B (the profits between 12/31/69 and 12/31/70)

---

3. Do you normally expect "debts" to refer to assets or to liabilities?

> When a frame offers a choice like this, the simplest way to to respond is to underline
>
> this way: ...refer to assets
> or this way: or to liabilities.
>
> (You do it right.)

A. Much of the language used by accountants is misleading to laymen. The topic of "Bad Debts" is particularly so. The debts referred to in "Allowance for Bad Debts" are debts of customers.

Are titles normally expressed from outside viewpoints, or, as with "Accounts Receivable", is the point-of-view that of the firm for which the ledger is maintained?

(Remember, underline.)

B. Another unexpected practice is reflected in the version of the Boggstown Grocery Income Statement, shown on Panel B (Yellow). "Bad Debts", which seems clearly a correction of over-stated revenue, is not classified as contra-revenue.

How does this Income Statement classify Bad Debts?

...as a(n) ______________________________ account.

C. Of course, the primary reason for making any adjustment is to improve the timing of the net income reported each period.

(Here, by matching the expenses of securing 1970 revenue with 1970 Sales - and NOT with sales of 1969 or 1971.)

Compare the Income Statements on Panels A and B.

Is the amount of 1970 profit different in the two reports, or is "Bad Debts" a $10 reduction in profit either way it is classified?

ANS. 3. to liabilities

A. ...they normally take the point of view of the firm
B. ...as an *expense (or operating expense)*
C. a $10 reduction in profit, either way....

SAVE the yellow pane.

4. A reminder on "timing"

The "accounting cycle" of the Boggstown Grocery lasts one calendar year. Part of "good timing" is confining all its 1969 sales to the 1969 Income Statement — including in its Sales account balance only the $2000 price of sales made in 1970. The $10 Bad Debts debit is likewise for "losses" from selling in 1970, only.

A. Which does the Income Statement indicate? (check ✓)

_____ that $10 is the whole year's bad debts

_____ that $10 is part of the firm's 1970 bad debts

_____ that some 1969 bad debts are included in the $10.

B. Look at the cover of the "Accounting Cycle" supplement (blue pages).

1. The step which placed the $10 debit in Bad Debts is number _______.

2. Some other amount (actually $14) was debited to Bad Debts at the end of 1969. Nevertheless, the balance of Bad Debts was zero (no longer affected by the 1969 debit) when 1970 began. The same cycle step excluded prior sales from the appropriate 1970 Sales balance of $2000. What number identifies this activity in the illustration?

Step no. ____________.

C. In view of A and B, check the correct statement.

_____ It's correct to debit Bad Debts on any day we learn that a receivable is uncollectible.

_____ It's wrong to debit Bad Debts on any but the last day of the accounting period.

ANSWER 4:

A. ✓ $10 is the whole year's bad debts.   C. It's wrong to....

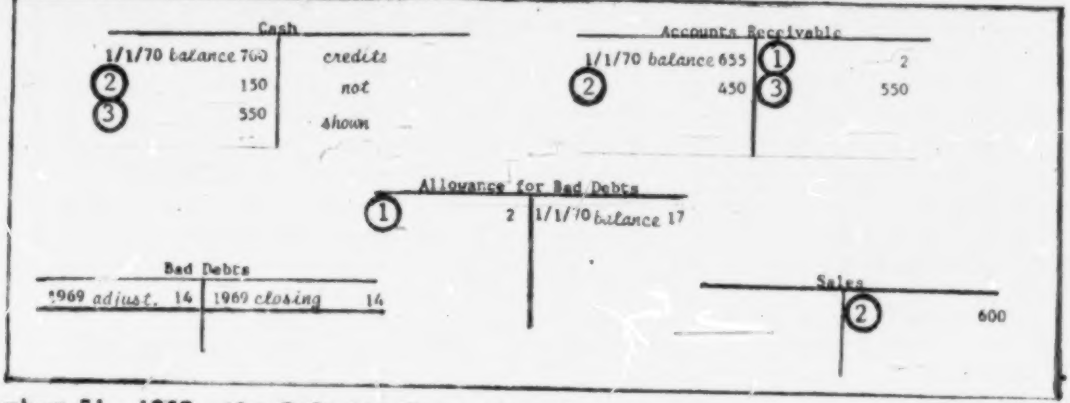
B. 1. 4 (adjusting entries)

2. 6 (closing)

> You should be generally familiar with the purpose of adjusting and closing. If either is hazy, review by completing the exercises in the blue "Accounting Cycle Supplement".

---

5. These are accounts of the Boggstown Grocery. All transactions affecting Accounts Receivable have been posted, in summary, for the first six months of 1970.


Cash
1/1/70 *balance* 700
② 150
③ 550
credits
not
shown
Accounts Receivable
1/1/70 *balance* 655
② 450
① 2
③ 550
Allowance for Bad Debts
① 2
1/1/70 *balance* 17
Bad Debts
1969 *adjust.* 14
1969 *closing* 14
Sales
② 600

On December 31, 1969, the Balance Sheet showed customer accounts to be valued at $638, thus:

Accounts Receivable	$655		
Less: Allowance for Bad Debts	17		*"valuation" account*
Net Accounts Receivable		$638	

These are descriptions of the transactions in the accounts.

1. Wrote off the uncollectible account of Black Co., $2.
2. Sales through June 30, $600.
3. Collections on customer accounts through June 30, $550.

A. Indicate which ones increase recorded profit up to June 30. ____________

B. Which ones call for an increase in TOTAL assets? ____________

C. 1. How much does the ledger show for uncollected customer accounts on June 30?

(circle) $600 $553 $538 $1103 some other amount

2. What recorded value does it show for them?

(circle) $600 $553 $538 $1103 some other amount

ANS. 5 A. 2 (the credit to Sales)

B. 2 (1 and 3 make equal debits and credits to the asset total.) 8

C. 1. $553 (Accounts Receivable BALANCE)

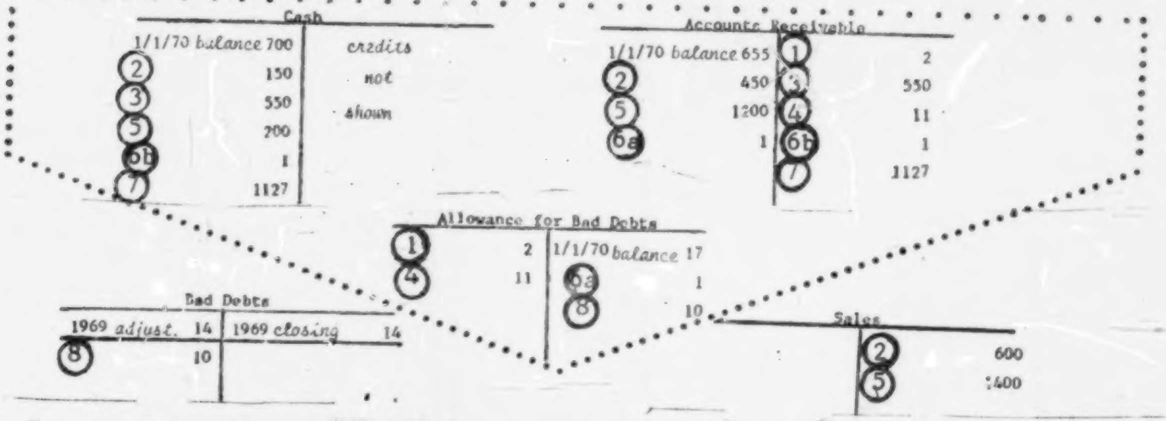
2. $538 (NET Accts. Rec.--after $15 Allowance for Bad Debts has been deducted from above balance.)

---

6. A. The remainder of 1970 transactions of BT Grocery were as follows: Circle the number(s) of those which decrease recorded valuation of TOTAL assets.

4. Specific customers' accounts written off. $7 sold to two firms last year and $4 sold to F. Fosdick in February.
5. July to December 31 $1400--$1200 of them on credit.
6. $1 of the Felix Lee account, which was written off in 1969, was recovered in August.
   a. To reverse our mistaken write-off entry.
   b. Normal entry for any collection of Accounts Receivable.
7. $1127 of regular collections during the last half of 1970.
8. YEAR-END ADJUSTMENT based on $2000 of Sales, $10. 50¢ on each $100 sold is our estimate of the overstatement recorded.

AFTER POSTING, the accounts appear as shown below. The accounts within the dotted border are part of the asset total. (Review your decisions on when that total was decreased.)


Cash
1/1/70 balance 700
② 150
③ 550
⑤ 200
6b 1
⑦ 1127
credits not shown
Accounts Receivable
1/1/70 balance 655
② 450
⑤ 1200
6a 1
① 2
③ 550
④ 11
6b 1
⑦ 1127
Allowance for Bad Debts
① 2
④ 11
1/1/70 balance 17
6a 1
⑧ 10
Bad Debts
1969 adjust. 14
⑧ 10
1969 closing 14
Sales
② 600
⑤ 1400

B. As with all Bad Debt adjustments, the $10 amount (Panel A, and transaction 8, above) is an estimate.

Rarely, if ever, will it be exact. Sometimes accountants are asked, "If you can't do it right, why do it at all?"

MAKING NO ALLOWANCE IS THE SAME AS ESTIMATING THE NECESSARY ALLOWANCE TO BE ZERO, HOWEVER.

Is an estimate based on the firm's past experience likely to be much nearer to the facts than a zero estimate?

Often the "credit loss" estimate is based on total Sales of the year. In Panel A it was ½% of $2000. Sometimes "estimate" means "anticipate". Sometimes "approximate" is nearer. Which is the case in Panel A? Check(✓)

______ We anticipate a $10 overstatement in the (unknown) amount of Sales and Receivables for 1971.

______ We think we won't be able to collect approximately $10 of the accounts arising from our (known) 1970 Sales.

ANS. 6 A. 8, only (Drs. & crs. inside the border have cancelling + and - effects.)

B. We think we won't be able to collect approximately $10 of the accounts arising from our (known) 1970 Sales.

---

7. We adjust our record of completed transactions for an estimated amount. Sales and Accounts Receivable are overstated by transactions which have already happened. What we anticipate in the contra-accounts is the discovery that specific customers can't pay. (In fact, it's possible that we have even discovered who some of the customers are, if the accounting period is long enough.)

"Writing-off" Uncollectible Accounts

When the Boggstown Grocery discovers that its customer, Eddie Fisher, can't pay, its debit merely removes part of the credit balance which, as the result of adjusting, already records the reduced, better value of the customer promises.

Allowance for Bad Debts			
1/10/71	3	Bal.	5 (of 1969 origin, or earlier)
(assumed date)		12/31/70	10 (accepted in 1970, if estimate is correct)

when we don't know who

Since we now feel sure Fisher's part of the uncollected debits in this BALANCE is uncollectible, we make a reduction of this (KNOWN) amount in the asset account, itself, with this credit.

Accounts Receivable			
12/31/70	615	1/10/71	3

when we find out who

A. Prove, with the new account balances, that the "net realizable value" (net Accounts Receivable) is still the $600 asset it was in the Panel A Balance Sheet (and before the above "write-off").

BEFORE		Jan. 10	
Accounts Receivable	$ 615	$	(see above)
Less: Allowance for Bad Debts	15		
NET*	$ 600	$ 600	

B. The unlikely coincidence that Accounts Receivable had the same balance on Jan. 10, as it did on the Balance Sheet date is assumed. Debits for more sales and credits for collections could raise or lower Accounts Receivable to any new balance by 1/10. In any such case, the "book value" * of Accounts Receivable before the write-off would be something other than $600.

Receivables and its related valuation account are the only accounts ever affected by a "write-off". Can this internal transaction ever change the amount of the net realizable balances of customer accounts?

The net (book) value

____(✓) will always be the same after a write-off as before.

____(✓) can be changed in net amount by recording a write-off.

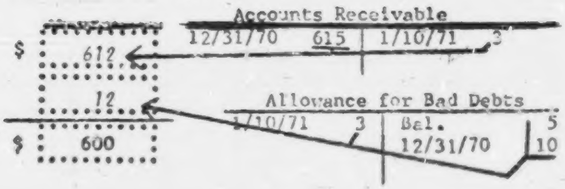
IF SO, you give an example:

Accounts Receivable	$	$
Less: Allowance for Bad Debts	15	
NET	$	$

---

* net Accounts Receivable, net realizable value

ANS. 7. A.


Accounts Receivable
12/31/70
615
1/10/71
3
$ 612
12
$ 600
Allowance for Bad Debts
1/10/71
3
Bal.
12/31/70
5
10

B.

The net (book) value

✓ (✓) will always be the same after a write-off as before.

____(✓) can be changed in net amount by recording a write-off.

GENERAL CASE shows write-off can never change value.

	BEFORE write-off		AFTER write-off
Accounts Receivable balance.	$x		$(x - W)
DEDUCT balance of Allowance for Bad Debts	y		(y - W)
Net realizable amount.	Z_1	= (x - y) =	Z_2

W = amount written off

x = balance of Accounts Receivable

Z_1 = value before write-off

Z_2 = value after write-off

y = CONTRA-asset balance (called Allowance for Bad Debts in this example)

* * *

8. Are you wondering why Accounts Receivable isn't simply credited with the estimated amount - in the adjustment, or do you know about "subsidiary ledgers?"

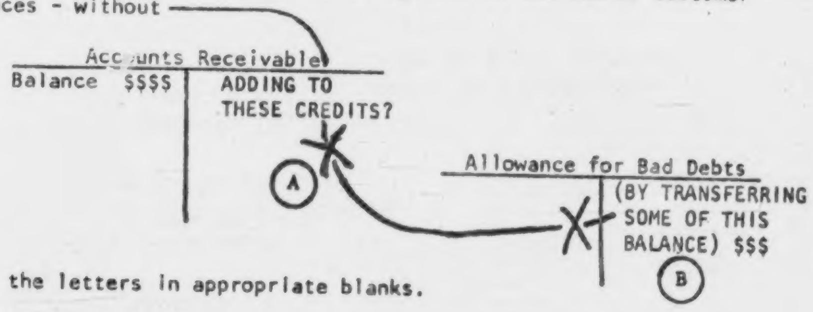
(If you know, and understand why the contra-account must be used, go to the next frame.) →

Accounts Receivable is the sum of many individual customer charges. (In fact, a computer may store only the individual accounts. It can find their sum almost instantly.) Somewhere, however, a record* of each customer's precise debt must be maintained. Accounts Receivable, of course, must agree precisely with their sum.

An estimate of overall collection failures identifies no person or firm. No basis exists for removing any specific customer's debt from the individual records. Since the Accounts Receivable balance is required to agree, no credit can be made to it. Total Assets is equally accurate if it is reduced in a valuation account.

When we decide to stop billing specific individuals because we feel sure they won't pay, that individual's record is removed.

Can Accounts Receivable continue to agree with the sum of customer balances - without


Accounts Receivable
Balance $$$$
ADDING TO THESE CREDITS?
A
Allowance for Bad Debts
(BY TRANSFERRING SOME OF THIS BALANCE) $$$
B

Place the letters in appropriate blanks.

Credits for defaults by customers NOT yet IDENTIFIED ______

Credits for defaults by IDENTIFIED customers........ ______

---

*Usually called a "subsidiary ledger."

9. Panel C is on the back of Panel B (Yellow).

Examine the example described there.

ANS. 8

NOT yet IDENTIFIED B

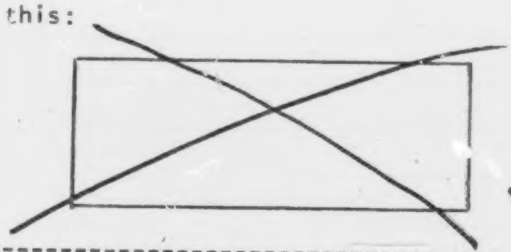
IDENTIFIED A

Without having Adette (or any particular customer) in mind personally, the firm estimated that 1% of its 1970 Maintenance Services were performed for customers who would default (as she did).

a. Which set of Panel C transactions does NOT record all the effects of selling to Adette in the proper year?

(Circle) I II

b. Get rid of this poor timing, like this:



That is, leave the good one on Panel C.

10. (Panel C--II)

ANS. 9

Ⓘ is incorrect. (The 1971 debit will be part of the 1971 Income Statement.)

1. The $370 debit and credit do two things. Which account is changed for each purpose?

ACCOUNTS:
- a. Allowance for Bad Debts
- b. Bad Debts
- c. Estimated Uncollectible Accounts
- d. Uncollectible Accounts Expense

Write its letter here. ↓

PURPOSES

________ To correct for additions to profit, such as the $62 credited when we billed Adette. ________

________ To help report the "net realizable value" of Accounts Receivable more accurately. ________

2. Which titles were used by Boggstown Grocery for the accounts having similar purposes?

WRITE THE LETTERS IN THE RIGHT-HAND BLANKS, ABOVE. ↑

11. If, in 10, you have c and d on the left (in either order) go right on to 12--next page.

If you don't have c and d on the left, you simply haven't looked at Panel C carefully. While a company may use the titles it chooses, synonyms are wrong once that choice has been made.

Correct frame 10 to agree with the company choices before you go on.

12. The correct ans. to 10 is d . . . . b
c . . . . a

Note that "allowance" appears only in the contra-asset title. "Losses," on the other hand, clearly occur over time, NOT ALL ON ONE DAY; so "Credit Losses" should appear on the Income Statement.

What must be true of the ambiguous title, "Allowance for Credit Losses"?

circle correct completions

a. tends to reduce total assets
b. tends to increase total assets
c. will be closed each period
d. is not closed
e. appears in "write-offs" AND adjustments
f. appears in "write-offs", only
g. appears in adjustments, only

---

13. Here and on the following page are right and wrong analyses for the entries of illustration II of Panel C. Circle the correct one in each numbered pair.

12. ⓐ ⓓ ⓔ

> A supplement entitled "THE ACCOUNTING MODEL" (green pages, yellow cover) is provided for those who need more help than the labels provide. The variety of forms are all means of showing that the "accounting equation" is the basis of recording the changes for an event, of relating and including the entire ledger, and of a set of reports related in the same way. You may consult it at any time. We mention page numbers, here; but begin with its first page, if the illustration does not make clear how to use a form.

PAIR A: 1970 sale to A. Orr

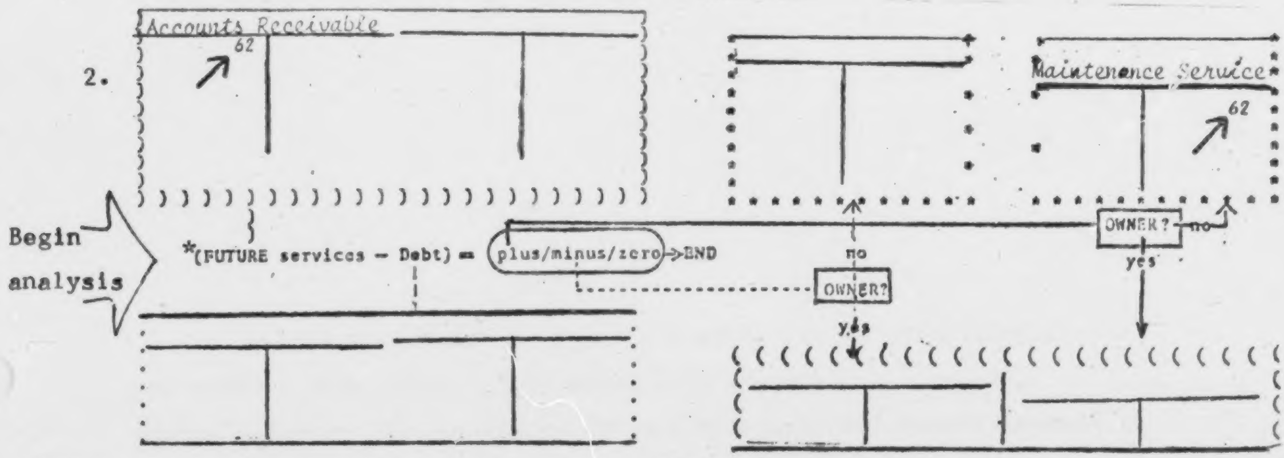
(Supplement page 6) Were correct columns chosen?

1.

ACCOUNT TITLES	CHANGES in				Owner Equity CHANGES					
	ASSETS		LIABILITIES		PROFIT ADDITIONS		PROFIT REDUCTIONS		OTHER	
	DR	CR	DR	CR	DR	CR	DR	CR	DR	CR
Accounts Receivable		62 –								
Maintenance Service					62 –					

("Accounting Model", supplement page 12)

2.



*or, (total assets - total liabilities) = total difference

PAIR B: (end of 1970)

(Supplement page 5)

1.

Step 1. (Circle a,b, or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2. Step 3. Step 4. Step 5.

"INTERNAL" trans.

Step 2.	MORE	LESS
Allowance	$	$
for Bad Debts	$	$ 370
	$	$

Step 6. { ZERO __ (✓) $+ ____ OR $- 370 }

Step 5: MORE or LESS $ $ $; { ZERO ✓ (✓) $+ ____ OR $- ____ }

Step 7. If not zero, show account and amount. ZERO ___ (✓)

Uncollectible Accounts Expense $ 370
expense

____ $____
investment

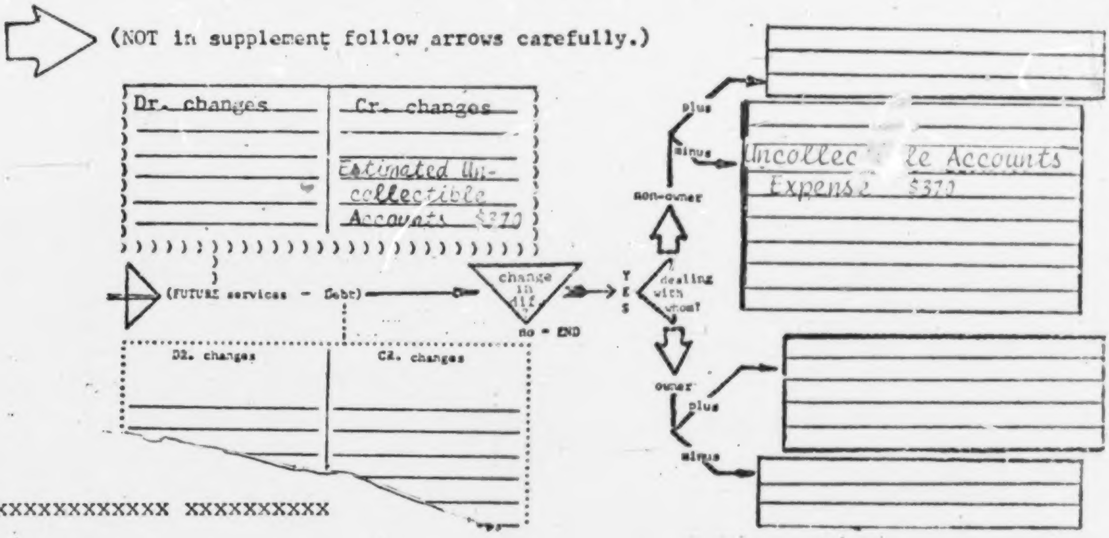
disinvestment ____ $____

income ____ $____

revenue ____ $____

(NOT in supplement follow arrows carefully.)

2.



Dr. changes	Cr. changes
	Estimated Uncollectible Accounts $370

Uncollectible Accounts Expense $370

xxxxxxxxxxxxxxxxxxxxxxxxxxx xxxxxxxxxx

PAIR C: 1971

(A. Orr write-off)

1.

(Supl. page 6)

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S) expense	income	revenue	Other
Est. Uncollectible Accounts	+ ____ − ____	+ ____ − ____	+ 62.— − ____	+ ____ − ____	+ ____ − ____	+ ____ − ____
Accounts Receivable	+ ____ − 62.—	+ ____ − ____	+ ____ − ____	+ ____ − ____	+ ____ − ____	+ ____ − ____
	+ ____	+ ____				

2.

(Supl. pages 3 & 4)

Step 1. What is the entity doing? (Circle a, b or c) ✓"internal transaction"

a. It is a CUSTOMER. [✓ b.] It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2. Which assets change?	Step 3. MORE	LESS
Estimated Uncollectible Accounts.	$ 62.—	$
Accounts Receivable	$	$ 62.—

From ALL of Step 3

Step 4. Which liabilities change? Step 5. MORE or LESS $ $ $

From ALL of Step 5

Step 6. $+ ____ ZERO ✓ (✓) OR $− ____ change in A → MINUS → change in L { ZERO ✓ (✓) OR $− ____ }

DIFFERENCE

Step 7. Change in P is: ZERO ✓(✓) Plus $ ____ Minus $ ____

ANS. 13 ② (Debit and Credit are reversed in 1.)

② ("Allowance for Bad Debts" is not this company's title.)

② (Est. Uncollectible Accounts is not expense, AND is not a + (plus) in OWNER'S equity. As shown, the first analysis calls for two credits.)

* *

IF YOU DIDN'T UNDERSTAND THE FORMS, stop. Study the green and yellow supplement from the beginning through page 7.

* *

14. Look at page 4 of the (blue) Accounting Cycle Supplement. If not familiar, study the three steps applied to adjust because office supplies are used up.

As with each adjustment problem, the FACTS given describe a test we can make to see whether our adjusting entry is correct. (We should always use it.) After step 3, in this example, Office Supplies had to have a $50 balance ("$50 worth on hand"). We are not told that Supplies Used must have a $30 balance. (It isn't necessary, although it's just as true.)

MAKING THE BAD DEBTS ADJUSTMENT

On Panel C, our maintenance firm estimated that Maintenance Service had been overstated by 1% of its $37,000 balance. Just as in the Supplement example, the $370 is not a direct estimate of both Uncollectible Accounts Expense and Estimated Uncollectible Accounts.

A. Which test does a 1% overstatement in Maintenance Service describe directly?

_____ (✓) Make sure a $370 credit balance is subtracted from Accounts Receivable to value them at the collectible amount.

_____ (✓) Make sure the debit balance needed to avoid a profit overstatement is $370.

_____ (✓) I'm not really sure what you mean.

IF YOU ARE NOT SURE, go to the next page now.

B. Otherwise, (if you know which test) to which account does the test apply?

____

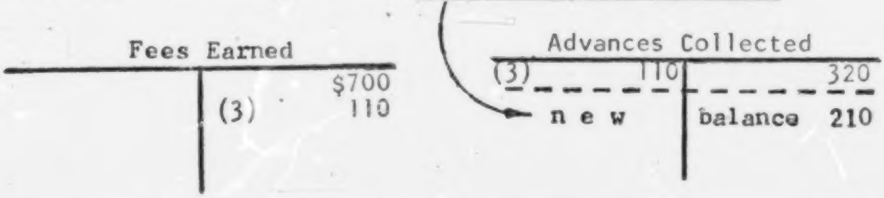
(title)

SKIP to page 16.

15. You're not sure about testing? (If you are, p. 16)

If you're making fudge, you may test the liquid by dropping it in cold water. Then you look for a "soft ball" which indicates it's ready to harden properly. Or you may test the water with a toe before swimming. You know how to recognize "too cold" and "not too cold."

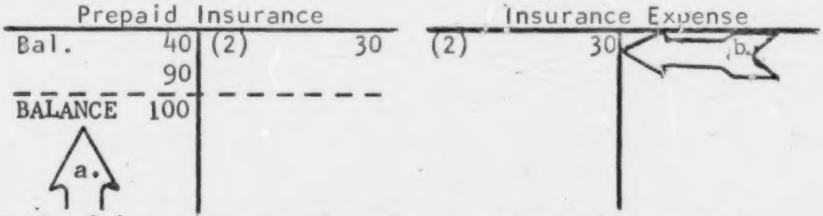
Adjustment data tells you what to look for in a correctly adjusted account For example, the balance of this liability


Fees Earned
$700
(3)
110
Advances Collected
(3)
110
320
new
balance
210

account meets the test, "Fees amounting to $210 remain unearned."

Fees Earned is correct for other reasons. It meets the test, "Fees earned this period include $110 which had been collected in prior periods," or "Total Fees Earned should be $810." However, these are different tests. The first says to look for a $110 increase. The second test calls for changing the balance to $810.

Adjustment (2) in these accounts is correct.


Prepaid Insurance
Bal.
40
90
BALANCE
100
(2)
30
a.
Insurance Expense
(2)
30
b.

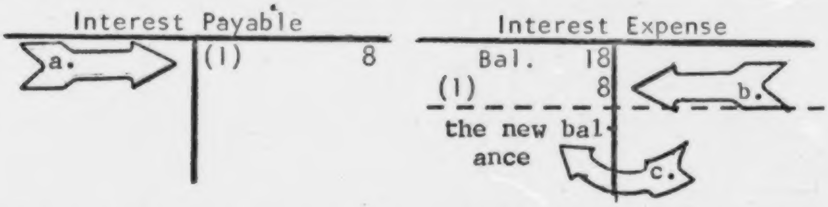
(2) $30 worth of insurance premiums have expired this period.

Does (2) tell you a is right or b is right (in illustration)? a b

---

16. Adjustment (1) in these accounts caused them to meet the three tests. The evidence is labelled a, b, and c.

ANS. 15 "expired this period" = b


Interest Payable
a.
(1)
8
Interest Expense
Bal.
18
(1)
8
b.
the new balance
c.

Here are three ways to say how you can test the "rightness" of adjustment (1). Put the appropriate letter in each blank.

____ "$8 of accrued interest should also be included in expense."

____ "Unrecorded interest, payable on outstanding notes, is $8."

____ "Additional interest expense should bring the period total to $26."

IF YOU SKIPPED from p. 14

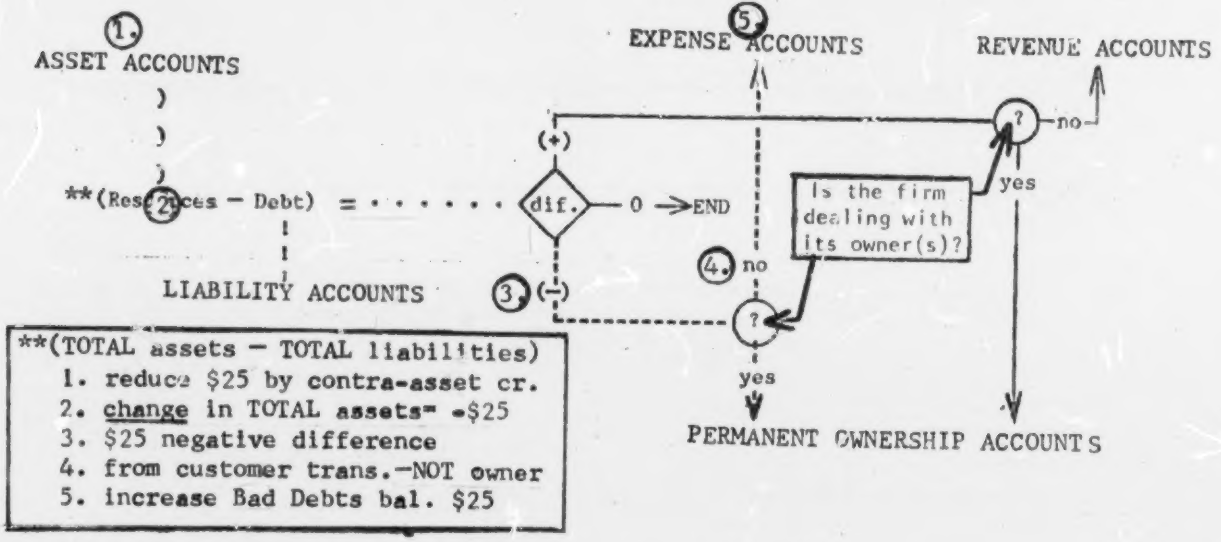
ANS. 16. b
a
c

ANS. 14. A. ✓ Make sure the debit balance needed to avoid a profit overstatement is $370.

B. *Uncollectible Accounts Expense*
(title)

A $370 credit balance will be correct only if Estimated Uncollectible Accounts has a zero unadjusted balance. It rarely will.

17. On October 10 the accounting department of your firm was notified that collecting the $25 account of Cyrus S., a customer, is considered to be hopeless. The new assistant directed that the ledger be changed as the model shows:


①
ASSET ACCOUNTS
**(Res②ces − Debt) = ...
LIABILITY ACCOUNTS
dif.
0 →END
(+)
③ (−)
⑤
EXPENSE ACCOUNTS
REVENUE ACCOUNTS
?
no
yes
Is the firm dealing with its owner(s)?
④ no
?
yes
PERMANENT OWNERSHIP ACCOUNTS

**(TOTAL assets − TOTAL liabilities)
1. reduce $25 by contra-asset cr.
2. change in TOTAL assets= -$25
3. $25 negative difference
4. from customer trans.—NOT owner
5. increase Bad Debts bal. $25

In reviewing his work you note that he adjusted when he should have written-off. He should have known better, because his work fails several tests.

What can you point out which he should have known (and used)? (Circle the letters)

a. The Accounts Receivable balance has not been reduced (although the subsidiary ledger should be).

b. He called for a debit change but not an equal credit change.

c. Total current assets should be reduced.

d. Total current assets should not be reduced.

e. October 10 is not the end of an accounting cycle or period.

f. The full profit effect of Bad Debts should only be recorded once, at the end of a period.

g. The allowance would never be reduced if accounting were done this way.

h. The entry made is appropriate for unidentified customers--not Cyrus S.

ANS. 17 A write-off: Dr. Allowance for Bad Debts $25

Cr. Accounts Receivable $25

produces NO CHANGE in total assets (or any other part of the model).

[✓ a.] The Accounts Receivable balance has not been reduced (although the subsidiary ledger should be).

b. He called for a debit change but not an equal credit change.

c. Total current assets should be reduced.

[✓ d.] Total current assets should not be reduced.

(We did, BUT we shouldn't.)

[✓ e.] October 10 is not the end of an accounting cycle or period.

[✓ f.] The full profit effect of Bad Debts should only be recorded once, at the end of a period.

[✓ g.] The allowance would never be reduced if accounting were done this way.

[✓ h.] The entry made is appropriate for unidentified customers--not Cyrus S.

IF YOU MISSED: d, above--review frame 7
a, g or h, above--review frame 8

---

18. In the prior frame:

What does test f imply about a bad debt "recovery"--the occasional, unexpected collection from a customer on whom a firm has given up? (circle a or b)

a. The firm has a gain. Credit loss debits are made because specific customers are expected not to pay Collecting from one, after writing him off means that a firm has overstated the profit-reduction in its adjustment (or that it will, if the write-off occurs in the period of the sale).

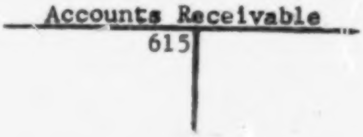
b. Recovery is NOT evidence that a smaller-than-normal amount will prove uncollectible. It made a mistake in writing-off the account--as much in reducing the allowance as in crediting Accounts Receivable. After reversing the mistake, a regular cash collection should be recorded.

ANS. 18

b.

---

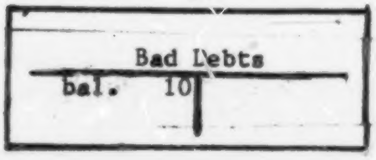
19. Instead of basing its adjustment on sales, the Boggstown Grocery Co. would have the same reports, if it estimated (nearest dollar) that it could NOT collect 2½% of the accounts summarized as:


Accounts Receivable
615

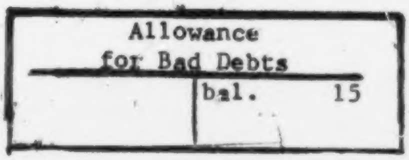
1. What should be in the ledger?

Both of these are right.

I.


Bad Debts
bal. 10

II.


Allowance for Bad Debts
bal. 15

However, we are telling you about only one of them (directly) by saying:

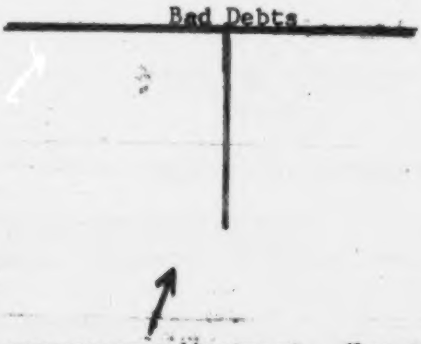
"2½ per cent of customers' accounts are uncollectible."

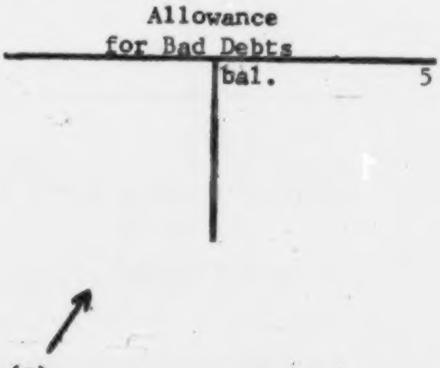
Circle its numeral. I. II.

---

2. What is in the ledger (before you adjust)?

These balances:




Allowance for Bad Debts
bal. 5

3. You make the necessary adjustment. Key with (3).

ANS. 19 (II.)

Bad Debts	
(B) 10	

Allowance for Bad Debts	
	5
	(B) 10

(*Balance* should be $15.)

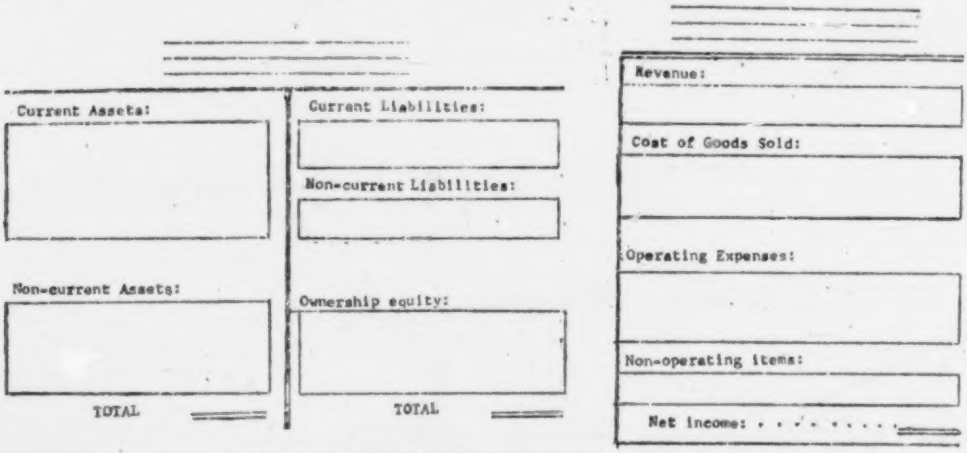
---

20. **This is a correct adjusting journal entry:**

①	31	*Loss on Uncollectible Accounts*		200 00	
②		*Provision for Doubtful Collectibility*			200 00
		To adjust for probable credit losses on 1970 Sales.			

A. Show which report (below) is improved by the above debit by writing the number 1 in an appropriate section of the outline financial statements.

Do the same for the credit by placing the 2 appropriately.


Current Assets:
Non-current Assets:
TOTAL
Current Liabilities:
Non-current Liabilities:
Ownership equity:
TOTAL
Revenue:
Cost of Goods Sold:
Operating Expenses:
Non-operating items:
Net Income: . . . .

B. There are two possible categories for reporting the Income Statement effect. Write the number in the other possible location, unless you already have.

C. Here are two ways you might be told of the need for the journal entry:

_____ Bad debts incurred in making net sales of $100,000 is estimated at $200.

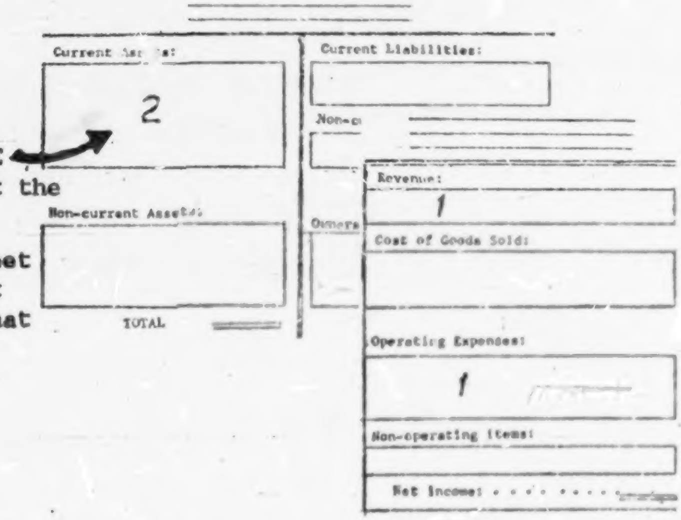
_____ The UNadjusted provision for expected failures to collect is $100. The necessary allowance is $300.

Indicate which report is improved by satisfying each stated test. (Put a in the blank for the Balance Sheet and b for the Income Statement.)

ANS. 20

A & B

DID YOU PUT THE LOSS HERE because you remember that the contra-account is subtracted? The balance sheet CAN'T contain a flow. It is dated, and true for that date, only.



C. b

a

---

21. The basis of an estimate is an important clue to the meaning of the amount estimated. The overstatement of Sales, or other profit-increasing account, is the result of the transactions of one accounting period. All the events occurred during the time period for which a single Income Statement is prepared. Therefore, the necessary expense or contra-revenue amount bears some fractional relationship to the balance of Sales. It is a larger fraction of those sales which were made on credit.

That is: If Sales are \$60,000, but \$20,000 were cash Sales, "bad debts losses" which were 4% of Sales $\left(\frac{\$2,400}{\$60,000}\right)$, would be 6% of "credit sales" $\left(\frac{\$2,400}{\$40,000}\right)$.

1. It is important to remember that the Accounts Receivable balance is the sum of amounts due from many individual customers. Of what does the Accounts Receivable balance consist?

(Circle A or B.)

A

ACCOUNTS		RECEIVABLE
DEBITS FOR credit sales of THIS PERIOD, ONLY	less	credits for collections and accounts written off during this period, ONLY

B

ACCOUNTS		RECEIVABLE
CUSTOMER debits FROM ALL PRIOR PERIODS and the current one.	less	credits for accounts "written off" against "Allowance for Bad Debts" in any period as well as all collections of individual balances in all periods to date

2. If an estimate is based on Sales, it is the correct amount to use in the in the adjusting entry. If we estimate that part of Accounts Receivable is uncollectible, have we estimated how much the correction should be or the balance that the contra-asset should have ?

ANS. 21. 1. B

2. ... the balance that the contra-asset should have.

---

22. Following each of the three statements about the overstatement of a Balance Sheet or Income Statement account is a pair of titles. Check the one in which you would correct for the overstatement described.

1. We need to adjust current assets to correct an overstatement of the receivables account by 8%.

____ Allowance for Bad Debts ____ Bad Debts

2. The Sales balance is believed to include ½ of 1% which was associated with customer charges which cannot be collected.

____ Credit Losses ____ Doubtful Accounts

3. We place the value of customers' outstanding balances at 96% of their total.

▽

____ Uncollectible Accounts Expense ____ Uncollectible Accounts

---

23. Here are some unadjusted T-accounts, including several from the above frame. Now that you can see their balances, reconsider your answers in that frame. Change any answer you should.

1) Allowance for Bad Debts	
22	16

3) Credit Losses	

5) Unidentified Defaults	
	421

2) Bad Debts	
10 10	20

4) Uncollectible Accounts	
	15

6) Loss on Doubtful Accounts	

Circle the numbers of the Income Statement accounts.

1 3 5

2 4 6

22.

23. 1* [✓ 3*] 5

[✓ 2] 4* [✓ 6]

(no balance) $20 credit is last period's closing.

*Correct choices for 22. (We agree that "Uncollectible Accounts" ought to be an exp. if "Bad Debts" is, but it does describe the contra-asset--& "Bad Debts" isn't descriptive.)

24. Here is a correct ADJUSTED trial balance.

STAR DISCOUNT STORE
Trial Balance
July 31, 1970

	Dr.	Cr.
1. Cash	$11,555	
2. Accounts Receivable	4,260	
3. Allowance for Doubtful Accounts		$ 810
4. Inventory	3,580	
5. Store Fixtures and Equipment	7,300	
6. Accumulated Depreciation		1,380
7. Accounts Payable		2,360
8. Withheld Income Taxes		200
9. Payroll Taxes Payable		40
10. James Ogilvie, Capital		20,980
11. Sales		9,245
12. Cost of Goods Sold	5,270	
13. Salaries	1,400	
14. Payroll Tax Expense	70	
15. Rent	300	
16. Advertising Expense	280	
17. Heat and Light Expense	105	
18. Telephone expense	35	
19. Sales Returns	70	
20. Uncollectible Account Expense	230	
21. Depreciation Expense	60	
Totals	$35,015	$35,015

a. Which adjustment step does it contain the answer to?

_____ (✓) What is in the record?

_____ (✓) What should be in the record?

b. Which statement tells you the test account no. 3 had to meet? (circle)

1. Making allowance for 50% uncollectibility on all past due accounts requires $810.
2. Making allowance for 50% uncollectibility on all past due accounts requires $230.

c. Which journal entry did the firm make? (explanations omitted)

(circle)

3.	31	Uncollectible Account Expense	810 00	
		Allowance for Doubtful Accounts		810 00

4.	31	Uncollectible Account Expense	230 00	
		Allowance for Doubtful Accounts		810 00

5.	31	Uncollectible Account Expense	230 00	
		Allowance for Doubtful Accounts		230 00

d. CROSS OUT the entry which is impossible--no matter what the facts are.

ANS. 24

Presumably, you X'd this one:

d. 4.

~~31~~	~~Uncollectible Account Expense~~	~~230 00~~	
	~~Allowance for Doubtful Accounts~~		~~810 00~~

DRS. must equal CRS.

EVERYBODY KNOWS THIS.

Answer a. is: What should be in the record? (It also is in the record because the trial balance has adjusted balances--but it wasn't there when the decision on what to do was being made.)

and b. [✓ 1.] Making allowance for 50% uncollectibility on all past due accounts requires $810.

---

25. 1. Refer to the trial balance on the last page. Show the answer to "WHAT IS in the record?" (before the accounts were adjusted)

Allow. for Doubtful Accounts		Uncollectible Account Expense	

2. Post the debit and credit you chose in part c (prior frame).

3. Are the balances in the T-accounts the ones in the trial balance? (last frame) IF NOT, change your answer AND your posting. Does that give the balances from the trial balance, OR are your T-accounts in 1 incorrect?

ANS. 25 & 24 c.

We hope you have this:

Allow. for Doubtful Accounts		Uncollectible Accounts Expense	
	Bal. 580	(adj.) 230	
	(adj.) 230		

You will if you tested both postings.

Of course, part c on the prior page should be answered like this:

c. [✓ 3.]

31	Uncollectible Account Expense	230 00	
	Allowance for Doubtful Accounts		230 00

****

FIND PANEL D on the back of PINK PANEL A

* *

26. Panel D illustrates a more elaborate procedure for estimating what can not be collected.

Base your answers to these questions on Panel D.

1. Here are some sections of the J. C, Pence financial statements. Letters replace some of the amounts.

Revenue:		
Sales		$150,000.00
Less: Sales Returns	$ 5,000.00	
Credit Losses	A	
Total reductions		
Net Sales		$

Current Assets:		
Cash		$ 1,000.00
Accounts Receivable	$ B	
Less: Allowance for Credit Losses	C	
Est. Realizable Value		D
Other Current Assets		$ 90,000.00
Total Current Assets		$

The auditor estimates $1326.50 as the correct amount for A B C D ?

2. Only three of the letters represent account balances. Which letter is an amount which is indirectly represented in the ledger?

A B C D

3 From his worksheet, you discover another amount,$__________, is the correct amount at ____.

What other amount(s) can you fill in?

$__________ at letter ____.

ANS.26

1. C

2. D (difference between B and C)

3. *$40,000* is the correct amount at *B*.

$*38,671.50* at letter *D*.

---

27. This is the J. C. Pence trial balance after adjusting for everything except bad debts.

Trial Balance
J. C. Pence
March 31, 1970

Advances from Customers		$ 20,000.00
Accounts Receivable	$ 40,000.00	
Allowance for Credit Losses		300.50
Cash	1,000.00	
Cost of Goods Sold	100,000.00	
Credit Losses	-0-	
J. C. Pence, Capital		55,699.50
Operating Expenses	20,000.00	
Other Current Assets	90,000.00	
Sales		150,000.00
Sales Returns	5,000.00	
Various Amounts Due Suppliers		30,000.00
TOTALS	$256,000.00	$256,000.00

I. As controller of J. C. Pence, one of your accounting staff asks which of the following entries should be made on the basis of the auditor's estimate. Review Panel D and test their outcomes.

31	*Credit Losses*		*1328 50*	
	Accounts Receivable			*1328 50*

31	*Credit Losses*		*1328 50*	
	Allowance for Credit Losses			*1328 50*

CROSS OUT his incorrect solution—or both of them, if necessary; and show him the correct adjustment, on the next page.

II. Show him how a correct adjustment converts "what IS" to "what SHOULD BE".

III. About six months later, another subordinate reports that he cannot write off the $50 account for which he had received authorization, "because we have run out of allowance".

Of course you tell him to go right ahead, that a debit balance in Allowance for Credit Losses will do no harm. When he asks where the money will come from, you realize he has the impression that the company sets aside money to "replace" amounts which customers fail to pay. Tell him the real meaning of the contra-asset balance.

Why should he know from a normal contra-asset balance that the amount doesn't represent money?

Because...

ANS. 27 I.

	~~31~~	~~Credit Losses~~	~~1328 50~~	
		~~Accounts Receivable~~		~~1328 50~~

	~~31~~	~~Credit Losses~~	~~1328 50~~	
		~~Allowance for Credit Losses~~		~~1328 50~~

1970				
Mar.	31	Credit Losses	1028 00	
		Allowance for Credit Losses		1028 00

II. Here is one way:

trial balance contains

Credit Losses

Dr.	Cr.

Allowance for Credit Losses

Dr.	Cr.
	bal. 300.50

"what should be"

Credit Losses

Dr.	Cr.
3/31 1028.00	

Allowance for Credit Losses

Dr.	Cr.
	bal. 300.50
	3/31 1028.00

balance becomes $1328.50

III.

You might explain that the allowance is A/Rec. credits not yet identified with persons or cos. Or you might explain about the adjustment which increases it.

Money is an asset, requiring a dr., NOT a cr., balance.

- -

28. "We sure underestimated our last Bad Debts adjustment, didn't we?" you are asked when you finish explaining.

You point out, however, that several of the accounts written off since then were from sales made in the current period--sales which hadn't occurred when the estimate was made.

a. Did the estimator try to foresee defaults on sales-not-yet-made, or do bad debt adjusting entries deal with overstatements among the completed transactions with customers?

b. Could the estimate also have been a poor one?

(circle) yes no

ANS. 28 a. the next set of adjusting entries (should) deal with overstatements among the completed transactions with customers.

b. Yes, but one can't tell from the unadjusted account balance.

---

29. What about timing?

Is it all right to be writing off defaults before providing an addition to the allowance?

Timing, or "matching", is important for making more accurate reports.

Will the financial statements look any different because the period's (whole) correction is not recorded until the last day of the cycle?

When will we have the best basis for estimating accurately?

Here again, are partial statements

Revenue:		
Sales		$150,000.00
Less: Sales Returns	$ 5,000.00	
Credit Losses	A	
Total reductions		
Net Sales		$

Current Assets:		
Cash		$ 1,000.00
Accounts Receivable	$ B	
Less: Allowance for Credit Losses	C	
Est. Realizable Value		D
Other Current Assets		$ 90,000.00
Total Current Assets		$

a. You recall that there is no single account in which the book value of Accounts Receivable (Estimated Realizable Value) can be found. However, it is easy to see, that, "Customer accounts are believed to be 90% collectible," which tells you to test amount D by taking 90% of B, also means that:

(fill in the blanks)

an account with amount_____ should be _____% of amount B.

b. Indicate whether these examples tell how to test A,C, or D by writing that letter in the left-hand blank.

_____ The period's bad debt losses are $700.

_____ 1% of our quarter's billings for Soft Water Service probably are uncollectible.

_____ We expect to collect only $97.50 per hundred dollars of charge accounts outstanding.

_____ $300 more uncollectible accounts are believed to be among the outstanding balances.

ANS. 29. a. C should be 10% of B.

b. A

A (quarter's billings = quarter's sales)

D ("Net realizable" is collectible.)

C

- -

NOW, turn the book

so you can read this. Continue on page 30.

30. An adjustment is making the ledger show what "should be" reported on financial statements. After recording your debit and credit, you should test for agreement with the adjustment information. You're responsible for what you do, not what you intend. The best accountant occasionally makes faulty trials. He catches his own mistakes, however. So should you.

Here is some adjustment data.

X. $100 more is needed in the bad debt allowance.

By looking at adjustment (X) in the accounts below, you can see that all of these statements have been completed correctly.

a. The contra-asset balance has been changed TO $ 90 .

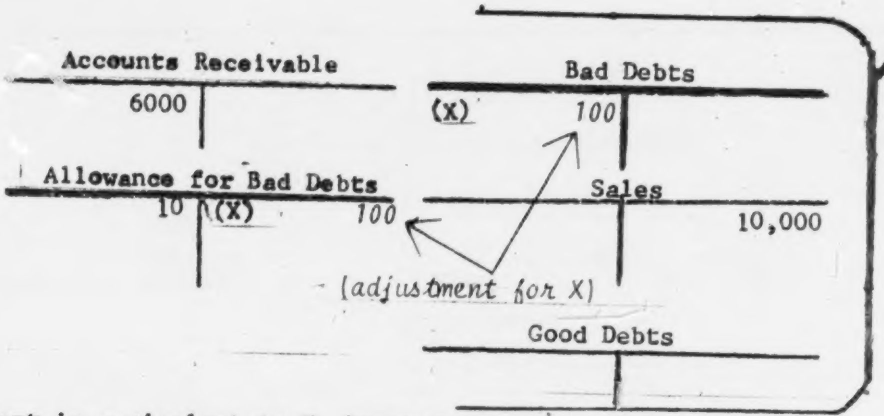
b. Net Accounts Receivable has been changed TO $ 5910 .

c. The contra-asset balance has been changed BY $ 100 .

d. Net Accounts Receivable has been changed BY $ 100 .

1. Using the adjustment information above, if you couldn't see the accounts, you could be sure of the truth of only two statements.

Which are they? (circle) a b c d



Only one statement is equivalent to X, however.

Since Net Accounts Receivable was not increased, only c states that the adjustment did exactly what X says "should be."

2. Replacing statement X by one of the following would call for the same entry as c did. Match outcomes a, b and d with the related adjustment data by writing each letter in the appropriate blank.

ALTERNATIVE ADJUSTMENT DATA

________ The book value of Accounts Receivable should be reduced by $100.

________ The customer accounts are estimated to be 98.5% collectible.

________ It is estimated that customer accounts which will eventually require write-off amount to ninety dollars at this time.

ANS. 30 1. a b [✓ c] [✓ d]

2. *d*

b (The subject is the value--the collectible amount.)
a (The subject is the correct contra-asset balance.)

- -

31. Each statement (a through d) in the prior frame gives a reason why the Balance Sheet will report its assets more correctly.

The debit in the frame 30 accounts also makes this a true statement:

A $*100* profit-reduction has been debited to *Bad Debts*.

Of course the report improved by this effect is the Income Statement. (The adjustment data might have said, "Revenue was probably overstated by $100 because of the customer accounts which will turn out uncollectible.")

A, below, and the next several cases ask you to accept or correct an adjustment according to some typical adjustment information. You will also be asked to complete ONE description which justifies the correct(ed) adjustment.

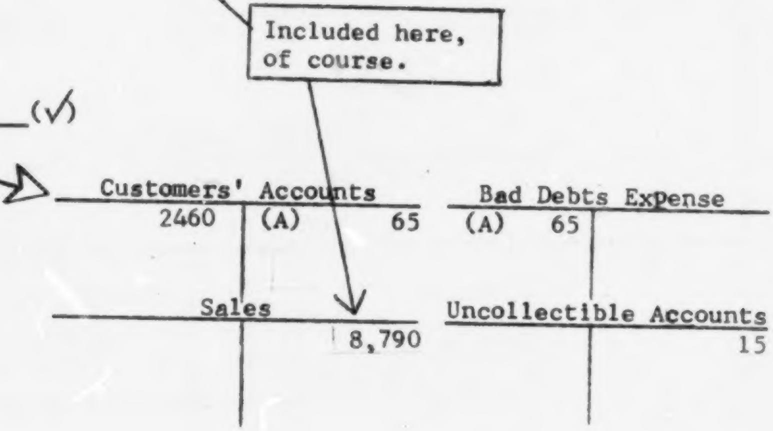
Complete the statement of what the problem "says" (rather than implies.)

ADJUSTMENT DATA:

(A) 1% of the year's credit sales of $6,500 are considered likely to have been based on worthless promises.

Check, if (A) is correct, ____ (✓)

or you correct it.



The test described has been met because:

Complete one statement, only. Since you've been told about the Income Statement, skip the statements about Balance Sheet values.

a. The contra-asset balance has been changed TO $__________.

b. Net Accounts Receivable has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

d. Net Accounts Receivable has been changed BY $__________.

(You finish it)↓

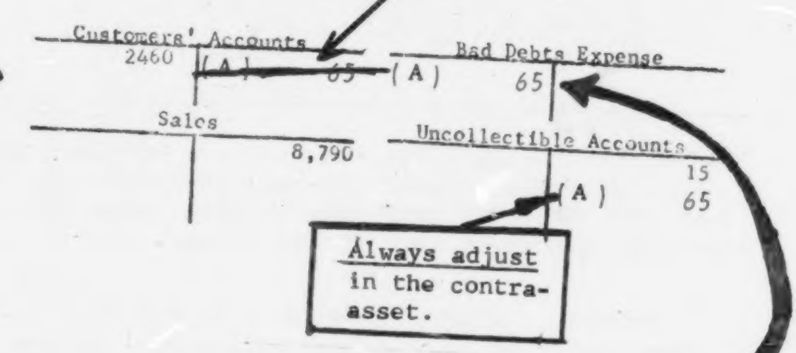
e. A $*65* profit reduction has been debited to ____________________.

The balance of Sales overstates the "correct" profit.

(A) 1% of the year's credit sales of $6,500 are considered likely to have been based on worthless promises.

Only when you know who it is.

you correct it


Customers' Accounts
2460
(A)
~~65~~
(A)
Bad Debts Expense
65
Sales
8,790
Uncollectible Accounts
15
(A)
65
Always adjust in the contra-asset.

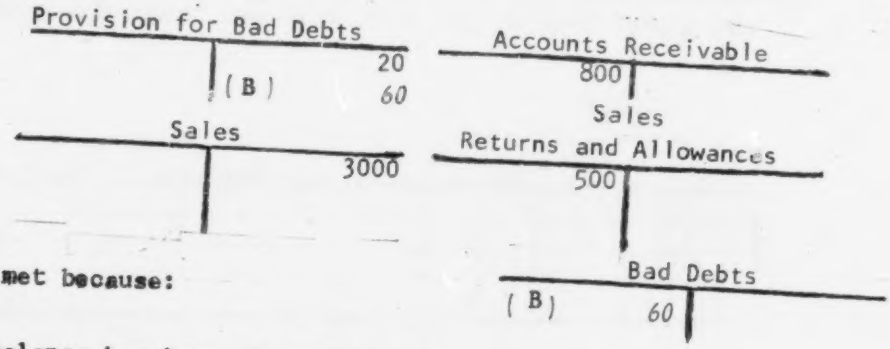
The test described has been met because:

e. A $ 65 profit reduction has been debited to Bad Debts Expense.

(B) Unidentified customers who will default on their charge accounts are estimated to make up ten percent of the Accounts Receivable balance.

Check, if (B) is correct, ___ (✓)

or you correct it.


Provision for Bad Debts
20
(B)
60
Accounts Receivable
800
Sales
3000
Sales Returns and Allowances
500
Bad Debts
(B)
60

The test described has been met because:

a. The contra-asset balance has been changed TO $________.

b. Net Accounts Receivable has been changed TO $________.

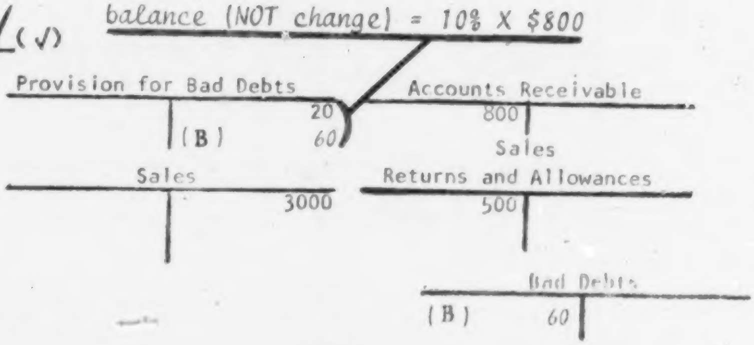
c. The contra-asset balance has been changed BY $________.

d. Net Accounts Receivable has been changed BY $________.

e. A $______ profit reduction has been debited to ____________.

(B) Unidentified customers who will default on their charge accounts are estimated to make up ten percent of the Accounts Receivable balance.

(B) is correct, ✓ (✓)



The test described has been met because:

a. The contra-asset balance has been changed TO $ 80 .

Just one statement for each case, remember.

1. (B) above, does NOT say that Provision for Bad Debts already has a $20 credit balance--you must notice.
2. To describe what Net Accounts Receivable "should be", 90% must be mentioned, not 10%.
3. The profit-reduction shouldn't be estimated from the present Accounts Receivable balance (and isn't).

By-pass test

Work carefully. If you answer the following correctly, you may skip ahead.

A. Adjustment information may refer to the allowance or to Bad Debts in many different ways. In each of the following pairs, indicate which phrase refers to the Balance Sheet account and which to to the amount of the Income Statement account.

As in the example, use 1 for the Balance Sheet and 2 for the Income Statement.

1 contra to customer debits	2 contra to revenue credits
____all uncollectible amounts	____uncollectible amounts of this period, only
____amount of revenue overstatement	____amount of receivables overstatement
____provision for doubtful collectibility	____provision for doubtful profit additions
____profits which won't be realized	____provision for write-offs

B. After adjustment, the two accounts probably will have unequal, as well as opposite, balances. Of course, the amounts of the debit and credit with which you adjust (check)

____should always be equal ____should probably be equal ____should never be equal

By-pass test answers:

1 contra to customer debits *example*

1 all uncollectible amounts

2 amount of revenue overstatement

1 provision for doubtful collectibility

2 profits which won't be realized

2 contra to revenue credits

2 uncollectible amounts of this period, only

1 amount of receivables overstatement

2 provision for doubtful profit additions

1 provision for write-offs

B. ✓ should always be equal (as in any other transaction)

IF ALL YOUR ANSWERS ARE RIGHT, SKIP to H, page 39; but return here ~~if you have trouble.~~

OTHERWISE,

- -

Continue.

(C) An allowance of $40 is estimated to be necessary to value receivables properly.

Check, if (C) is correct, ___ (✓) or you correct it.

Uncollectible Balances	
	9.50
	(C) 40.00

Accounts Receivable	
7,200	

Sales Returns & Allowances	
150	

Loss on Uncollectible Accounts	
(C) 40.00	

Accounts Payable	
	6,592

The test described has been met because:

a. The contra-asset balance has been changed TO $__________.

b. Net Accounts Receivable has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

d. Net Accounts Receivable has been changed BY $__________.

e. A $_______ profit reduction has been debited to __________________.

Always refers to the contra-asset.

(C) An allowance of $40 is estimated to be necessary to value receivables properly.

(We already had a $9.50 allowance.)

you correct it.

Uncollectible Balances

	9.50
	(c) ~~40.00~~ 30.50

Accounts Receivable

7,200	

Sales Returns & Allowances

150	

Loss on Uncollectible Accounts

(c) ~~40.00~~ 30.50	

Accounts Payable

	6,592

The test described
has been met because:

a. The contra-asset balance has been changed TO $ 40.

- -

(D) Accounts Receivable should be valued at $792.

Check, if (D) is correct, ___ (✓)

or you correct it.

Accounts Receivable

800	

Allowance for Bad Debts

3/17 4	12
8/2 6	(D) 6

Sales

	2650

Sales Discounts

20	

Bad Debts Expense

(D) 6	

The test described
has been met because:

a. The contra-asset balance has been changed TO $__________.

b. Net Accounts Receivable has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

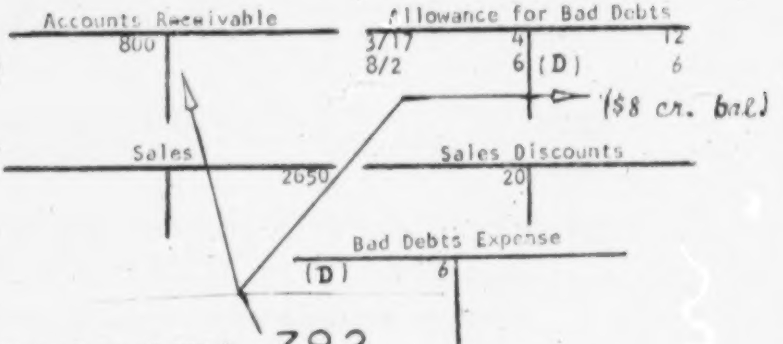
d. Net Accounts Receivable has been changed BY $__________.

e. A $_______ profit reduction has been debited to ____________________.

(D) Accounts Receivable should be valued at $792.

(The contra-asset is a "valuation account.")

➡ (D) is correct, ✓ (√)


Accounts Receivable
800
Allowance for Bad Debts
3/17
4
12
8/2
6
(D)
6
($8 cr. bal)
Sales
2650
Sales Discounts
20
Bad Debts Expense
(D)
6

The test described has been met because:

b. Net Accounts Receivable has been changed TO $ 792 .

Balance Sheet will show:	
Accounts Receivable	$800
Less Allowance for Bad Debts	8
Net Accounts Receivable	$792

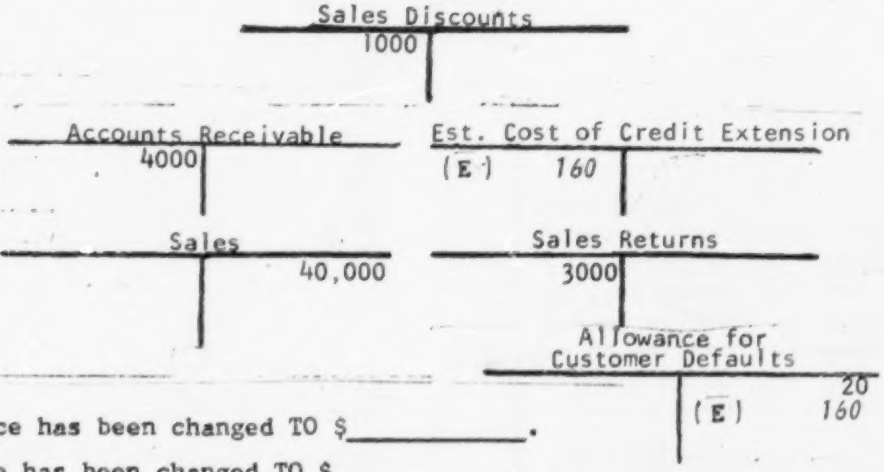
recorded value of $800 in customer promises

- -

(E) Loss from extending credit during the past year is estimated to be ½ percent of net Sales.

Check, if (E) is correct, ____ (√)

or you correct it. →


Sales Discounts
1000
Accounts Receivable
4000
Est. Cost of Credit Extension
(E)
160
Sales
40,000
Sales Returns
3000
Allowance for Customer Defaults
20
(E)
160

The test described has been met because:

a. The contra-asset balance has been changed TO $__________.

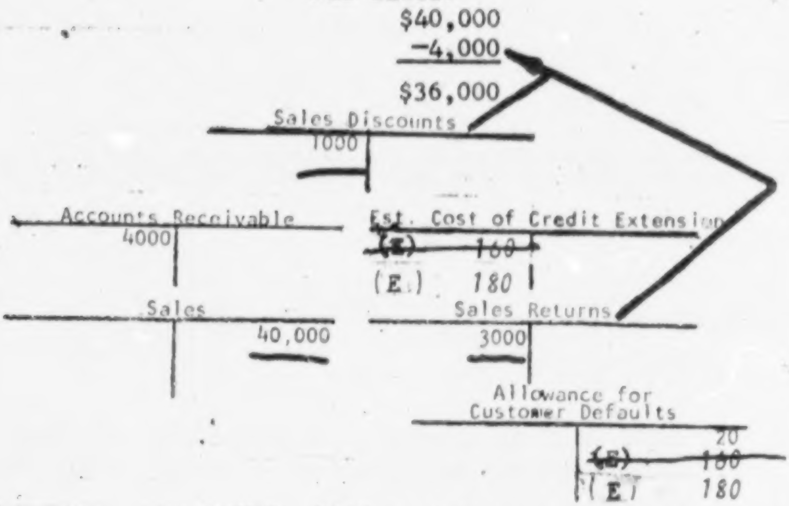
b. Net Accounts Receivable has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

d. Net Accounts Receivable has been changed BY $__________.

e. A $_______ profit reduction has been debited to ______________________.

(E) **Loss from extending credit during the past year is estimated to be ½ percent of net Sales.**


NET sales:
$40,000
-4,000
$36,000
Sales Discounts
1000
Accounts Receivable
4000
Est. Cost of Credit Extension
~~(E) 160~~
(E) 180
Sales
40,000
Sales Returns
3000
Allowance for Customer Defaults
20
~~(E) 160~~
(E) 180

e. A $ *180* profit reduction has been debited to *Estimated Cost of Credit Extension.*

- -

From here on, you adjust the accounts. Then complete the description of what you did which most nearly agrees with what the data states is right.

(F) **The firm believes that the deduction for doubtful customer accounts should be one which gives a $21,000 book value.**

Balances

Doubtful of Collection	
100	1800
700	200

Revenue from Consulting Fees	
	60,100

Loss on Doubtful Accounts	

Due from Customers	
10,000	200
15,000	10,200
9,400	600

The test described has been met because:

a. The contra-asset balance has been changed TO $__________.

b. Net due from Customers has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

d. Net due from Customers has been changed BY $__________.

e. A $_______ profit reduction has been debited to ____________________.

(F) The firm believes that the deduction for doubtful customer accounts should be one which gives a $21,000 book value.

Balances Doubtful of Collection	
100	1800
700	200
	(F) 1200

Revenue from Consulting Fees	
	60,100

Loss on Doubtful Accounts	
(F) 1200	

Due from Customers	
10,000	200
15,000	10,200
9,400	600

b. Net due from customers has been changed TO $ 21,000.

balances

Book value:

Due from Customers	$23,400
Less Balances Doubtful of Collection	2,400
Net Due from Customers	$21,000

- -

(G). All but 3% of currently outstanding customer accounts are considered to be assets.

Accounts Receivable	
1000	

Est. Uncollectible Balances	
6	

Commissions Earned	
	8400

Loss on Uncollectible Accts.	

The test described has been met because:

a. The contra-asset balance has been changed TO $__________.

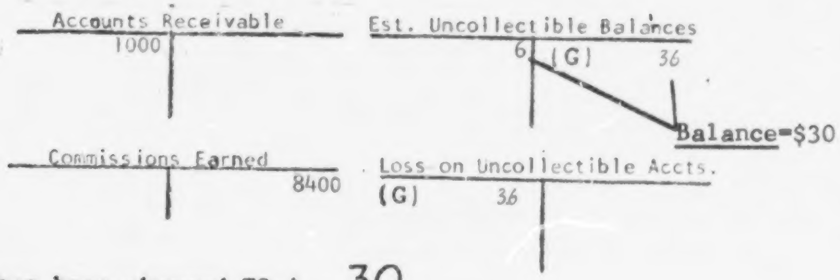
b. Net Accounts Receivable has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

d. Net Accounts Receivable has been changed BY $__________.

e. A $________ profit reduction has been debited to ____________________.

(G). All but 3% of currently outstanding customer accounts are considered to be assets.


Accounts Receivable
1000
Est. Uncollectible Balances
6
(G)
36
Balance=$30
Commissions Earned
8400
Loss on Uncollectible Accts.
(G)
36

a. The contra-asset balance has been changed TO $ 30 .

- -

Accounts Receivable has a $40,300 balance and Allowance for Doubtful Accounts has a credit balance of $2000.

(Draw your own picture, and adjust for the following.)

(H) By aging Accounts Receivable, $3,500 has been estimated as the portion we will probably not be able to collect.

The test described has been met because:

a. The contra-asset balance has been changed TO $__________.

b. Net Accounts Receivable has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

d. Net Accounts Receivable has been changed BY $__________.

e. A $_______ profit reduction has been debited to ____________________.

(H) Accounts Receivable has a $40,300 balance and Allowance for Doubtful Accounts has a credit balance of $2000.

By aging Accounts Receivable, $3,500 has been estimated as the portion we will probably not be able to collect.

Accounts Receivable	
40,300	

Allowance for Doubtful Accounts	
	2000
	(H) 1,500

Loss on Doubtful Accounts	
(H) 1,500	

a. The contra-asset balance has been changed TO $ 3500 .

- -

(I) Until this period's Bad Debt adjustment is made, current assets are believed to be overstated by $50.

Accounts Receivable	
5000	

Allowance for Bad Debts.	
	100

Bad Debts Expense	

Sales	
	20,500

Sales Discounts	
500	

The test described has been met because:

a. The contra-asset balance has been changed TO $__________.

b. Net Accounts Receivable has been changed TO $__________.

c. The contra-asset balance has been changed BY $__________.

d. Net Accounts Receivable has been changed BY $__________.

e. A $_______ profit reduction has been debited to ____________________.

(I) Until this period's Bad Debt adjustment is made, current assets are believed to be overstated by $50.

Accounts Receivable	
5000	

Allowance for Bad Debts.	
	100
	(I) 50

Bad Debts Expense	
(I) 50	

Sales	
	20,500

Sales Discounts	
500	

d. Net Accounts Receivable has been changed BY $ 50 .

(J) Aging of Accounts Receivable indicates that about $160 in uncollectible balances are included.

Check here ___ (✓), if the ledger will be correctly adjusted by posting this journal entry.

30	*Allowance for Uncollectible Accounts*	100 00	
	Bad Debts		100 00
	To adjust the contra-asset to $160.		

If it won't, you journalize the correct one.

Sales	
	6,950

Allowance for Uncollectible Accounts	
	60

Bad Debts	

Accounts Receivable	
1,600	

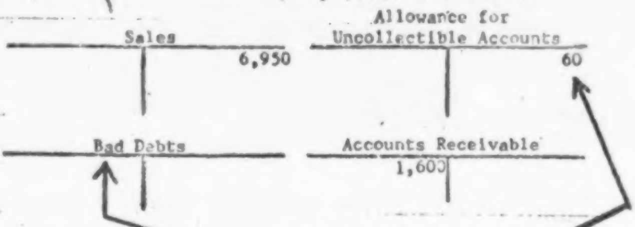
What does the adjustment information tell you the result should be?

(J) Aging of Accounts Receivable indicates that about $160 in uncollectible balances are included.

Check here ___ (✓), if the ledger will be correctly adjusted by posting this journal entry.

30	~~Allowance for Uncollectible Accounts~~	~~10000~~	
	~~Bad Debts~~		~~10000~~
	~~To adjust the contra-asset to $160.~~		

If it won't, you journalize the correct one.


Sales
6,950
Allowance for Uncollectible Accounts
60
Bad Debts
Accounts Receivable
1,600

30	Bad Debts	10000	
	Allowance for Uncollectible Accounts		10000
	(Same explanation)		

What does the adjustment information tell you the result should be?

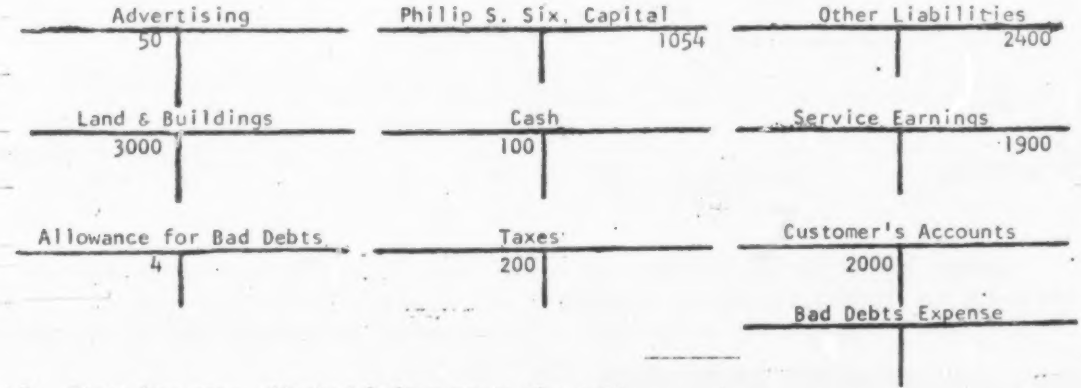
The contra-asset (Allowance for Uncollectible Accounts) should have a $160 credit balance.

---

32. 1. Adjust the ledger below for the following information (A).

(A) It is estimated that revenue from services billed this quarter is overstated by 1%, due to our inability to collect all charge accounts.

LEDGER:


Advertising
50
Philip S. Six, Capital
1054
Other Liabilities
2400
Land & Buildings
3000
Cash
100
Service Earnings
1900
Allowance for Bad Debts
4
Taxes
200
Customer's Accounts
2000
Bad Debts Expense

2. State how your adjusted ledger meets the test described by the adjustment information.

3. The asset account balances total $5,100, both before and after your adjustment, yet "Total Assets" on the Balance Sheet will be a different amount.

What is it? $__________.

ANS. 32.

(A) It is estimated that revenue from services billed this quarter is overstated by 1%, due to our inability to collect all charge accounts.

1. LEDGER:

Advertising	50	
Philip S. Six, Capital		1054
Other Liabilities		2400
Land & Buildings	3000	
Cash	100	
Service Earnings		1900
Allowance for Bad Debts	4	(A) 19
Taxes	200	
Customer's Accounts	2000	
Bad Debts Expense	(A) 19	

2. *A $19 profit reduction has been debited to Bad Debts Expense. (1% of $1900 in Service Earnings)*

3. $5,085 ($5100 less contra-asset $15)

---

33. Finish adjusting this ledger before its semiannual closing.

(B) This corporation's accounts with customers are estimated, at December 31, to be 99½% collectible.

LEDGER:

Accounts Receivable	3000	
Accrued Wages		50
Sales Returns & Allow.	110	
Capital Stock		3000
Cash	600	
Deferred Advertising Exp.	420	
Cost of Goods Sold	2500	
Loss on Credit Extended		
Notes Payable		1150
Property Taxes	1400	
Retained Earnings	10	
Sales		4900
Supplies	870	
Trading Costs	200	
Uncollectible Accounts	9/4 10 10/20 10	Bal. 7/1 25 10/2 5

How have you met a test based on (B)?

ANS. 33

This corporation's accounts with customers are estimated, at December 31, to be 99½% collectible.

LEDGER:

1) Accounts Receivable	
3000	

2) Accrued Wages	
	50

3) Sales Returns & Allow.	
110	

4) Capital Stock	
	3000

5) Cash	
600	

6) Deferred Advertising Exp.	
420	

7) Cost of Goods Sold	
2500	

8) Loss on Credit Extended	
(B) 5	

9) Notes Payable	
	1150

10) Property Taxes	
1400	

11) Retained Earnings	
10	

12) Sales	
	4900

13) Supplies	
870	

14) Trading Costs	
200	

BALANCE (35-20)

15) Uncollectible Accounts			
9/4	10	Bal. 7/1	25
10/20	10	10/2	5
		(B)	5

Net Accounts Receivable has been reduced to $2985 (99 1/2% of $3,000) by increasing Uncollectible Accounts to $15.

- -

34. Assume a customer whose account had been removed from the above ledger brings in his $8.

A mistake has been made. His individual record is returned to the customer file. Undo the mistake. Reverse $8 of the write-off. KEY dr. & cr. with (A).

Accounts Receivable	
3000	

Uncollectible Accounts	
	Bal. 15

Record the collection as usual. KEY with (B). (Set up the account you need.)

This is NOT the period when we made this sale. Test your result.

This period's profit (✓)

___ should be increased.

___ should not be changed. ___ should be reduced.

Are total assets changed?

(circle) yes no

Now, remove this page; continue.

ANS. 34

Accounts Receivable	
3000	(B) 8
(A) 8	

Uncollectible Accounts	
	Bal. 15
	(A) 8

Cash	
(B) 8	

(profit) ✓ should not be changed. (only the adjustment affects pft.)

total assets are NOT changed (see accts.) Every increase offset by = decrease.

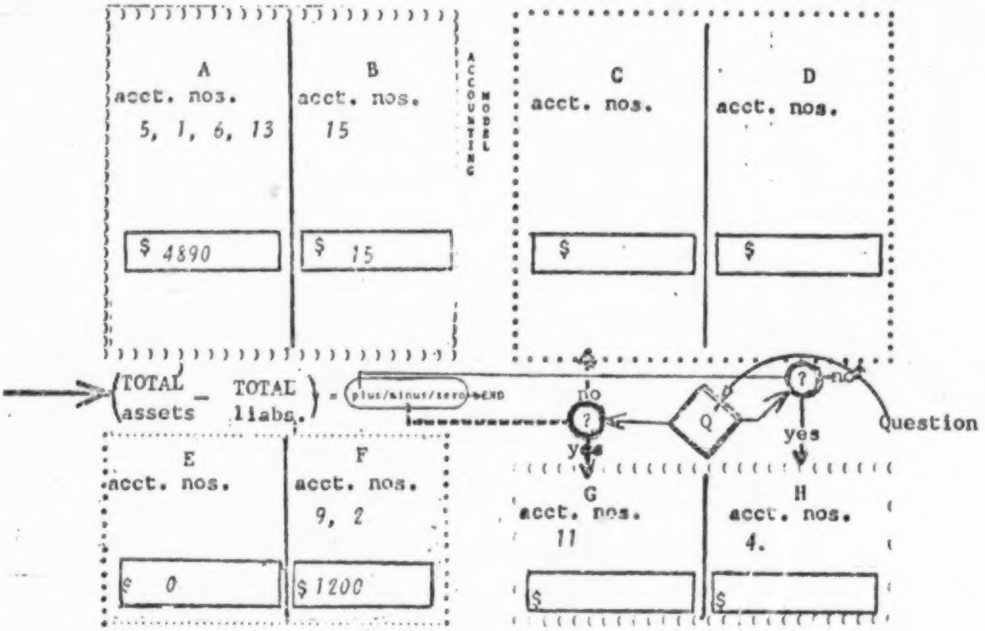
---

35. After the entry in frame 33 (and ignoring 34) the corporation is ready to prepare financial statements.

1. To help you recall that they are the permanent proprietorship accounts of a corporation the account numbers (added to the solution of 33) for Capital Stock and Retained Earnings have been entered in appropriate boxes of the model below. NOTE that its deficit (debit balance) is the reason for locating 11 in section G. This is sufficient to identify the question at Q. What is it?

(You state the question) ____

____


ACCOUNTING MODEL
A
acct. nos.
5, 1, 6, 13
$ 4890
B
acct. nos.
15
$ 15
C
acct. nos.
$
D
acct. nos.
$
TOTAL assets − TOTAL liabs. = plus/minus/zero→END
no
?
yes
Q
?
no
yes
Question
E
acct. nos.
$ 0
F
acct. nos.
9, 2
$ 1200
G
acct. nos.
11
$
H
acct. nos.
4.
$

2. After financial statements are prepared, the ledger is readied for a new period by "closing entries." You may enter them in 33 accounts, if you wish. However, assign to the model boxes the numbers of accounts which will have non-zero balances AFTER CLOSING - making sure each is appropriately located. Then show one (summary) amount for each section (including $0). Make sure you have an equation.

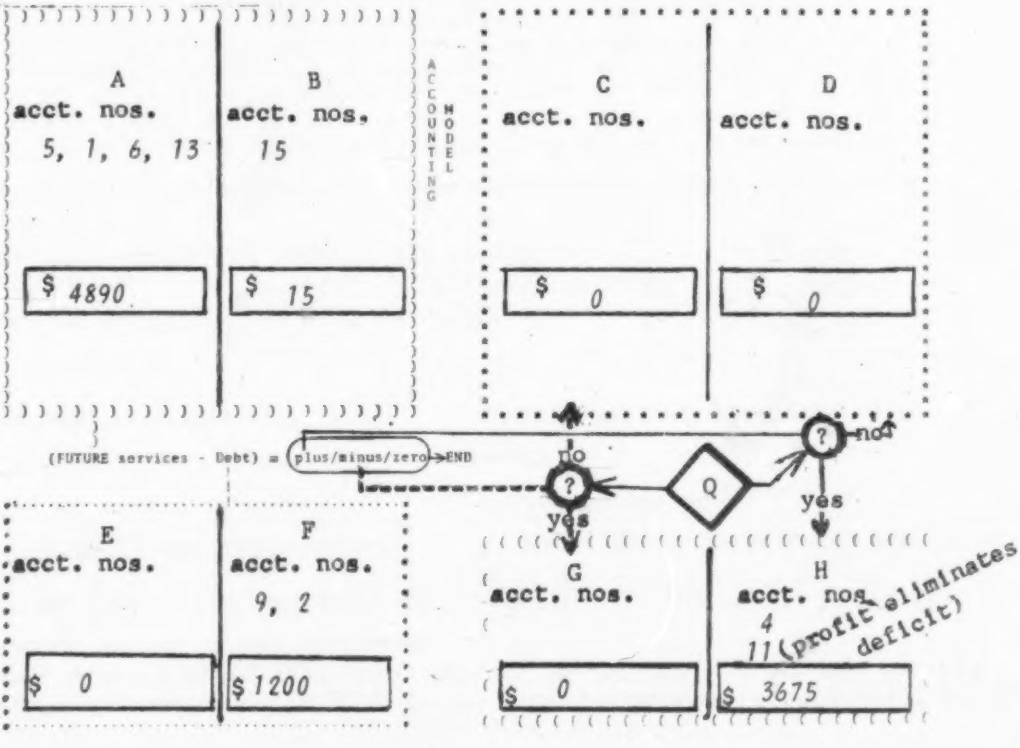
(A, B, E and F are examples.)

BEFORE CHECKING YOUR ANSWER TO 35, did you test your dollar-amounts to see whether both sides of the equal sign satisfy the equation?

Always make sure you haven't settled for an impossibility.

ANS. 35 1. *Is the firm (entity) dealing with its owners?*

2.


A
acct. nos.
5, 1, 6, 13
$ 4890
B
acct. nos.
15
$ 15
ACCOUNTING MODEL
C
acct. nos.
$ 0
D
acct. nos.
$ 0
(FUTURE services - Debt) = plus/minus/zero→END
no
?
Q
?
no
yes
yes
E
acct. nos.
$ 0
F
acct. nos.
9, 2
$ 1200
G
acct. nos.
$ 0
H
acct. nos.
4
11 (profit eliminates deficit)
$ 3675

(4890 - 15 - 1200) = 3675

36 A. Prepare the Current Assets section of the corporation (33 ledger) Balance Sheet.

Current Assets:			
Cash		$ 600 00	
Accounts Receivable			

B. On the first day of the new accounting period, it is decided that the outstanding balances of two customers are uncollectible. The total of $12 is to be written off, as their individual records are removed from the current file.

1. What explanation would you give to a critic who suggested that you, as manager, had postponed the write-offs in order to make the last accounting period appear more profitable than it was?

____

____

2. Show an analysis of the transaction to demonstrate what the effects are:

Titles	MORE	or LESS
____________	$______	$______
____________	$______	$______
____________	$______	$______

{ ZERO ___ (✓) $+ ______ OR $- ______ } change in A

Titles	MORE	or LESS
____________	$______	$______
____________	$______	$______
____________	$______	$______

change in L { ZERO ___ (✓) $+ ______ OR $- ______ }

If not zero, show account and amount. ZERO _____ (✓)

expense ____________ $______

investment ____________ $______

disinvestment ____________ $______

income ____________ $______

revenue ____________ $______

3. If your current asset section were prepared as of the moment after the writing-off (assume no other transactions in the new period), which lines would be different?

Demonstrate the affected lines only:

ANS. 36 A.

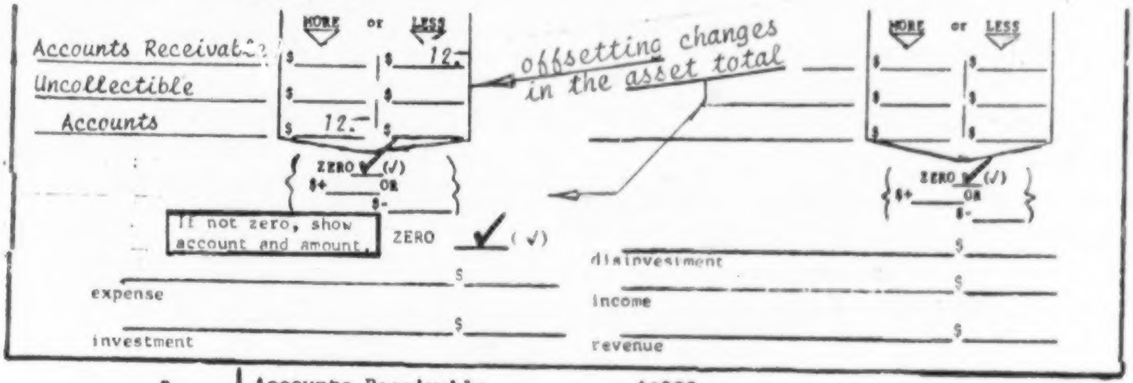
"Prepaid Advertising" is more familiar.

Current Assets:			
Cash		$ 600	
Accounts Receivable	$3000		
Less: Uncollectible Accounts	15		
Net Accounts Receivable		2985	
Supplies		870	
Deferred Advertising Expense		420	
Total Current Assets (also, as it happens, this is total assets)			$4875

Your work is NOT correct unless you have this amount.

B. 1. Profits are affected only by the adjustment, which was made in time to affect prior period profits.

2. Demonstration:



	MORE	or LESS
Accounts Receivable	$	$ *12.–*
Uncollectible Accounts	$ *12.–*	$

ZERO ✓ (✓)

offsetting changes in the asset total

If not zero, show account and amount.

ZERO ✓ (✓)

expense $

investment $

disinvestment $

income $

revenue $

3. Accounts Receivable $2988

Less: Uncollectible Accounts 3 (still 2985 net A/Rec.)

(only affected lines)

- -

37. Show the effect of a recovery of $5 from a customer whose account the above firm had written off.

(Make sure you enter amounts under appropriate columns. For illustrated use, Suppl. p. 6.)

ACCOUNT TITLES	CHANGES in				Owner Equity CHANGES					
	ASSETS		LIABILITIES		PROFIT ADDITIONS		PROFIT REDUCTIONS		OTHER	
	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.

ANS. 37.

	ACCOUNT TITLES	CHANGES in				Owner Equity CHANGES					
		ASSETS		LIABILITIES		PROFIT ADDITIONS		PROFIT REDUCTIONS		OTHER	
		DR	CR	DR	CR	DR	CR	DR	CR	DR	CR
1	Accounts Receivable	5 —									
	Uncollectible Accounts		5 —								
2	Cash	5 —									
	Accounts Receivable		5 —								

or this net effect is o.k.

38. Now, put it all together.

The following trial balance is from a ledger which has been adjusted for everything except Bad Debts.

Felix Fleming
August 31, 1970

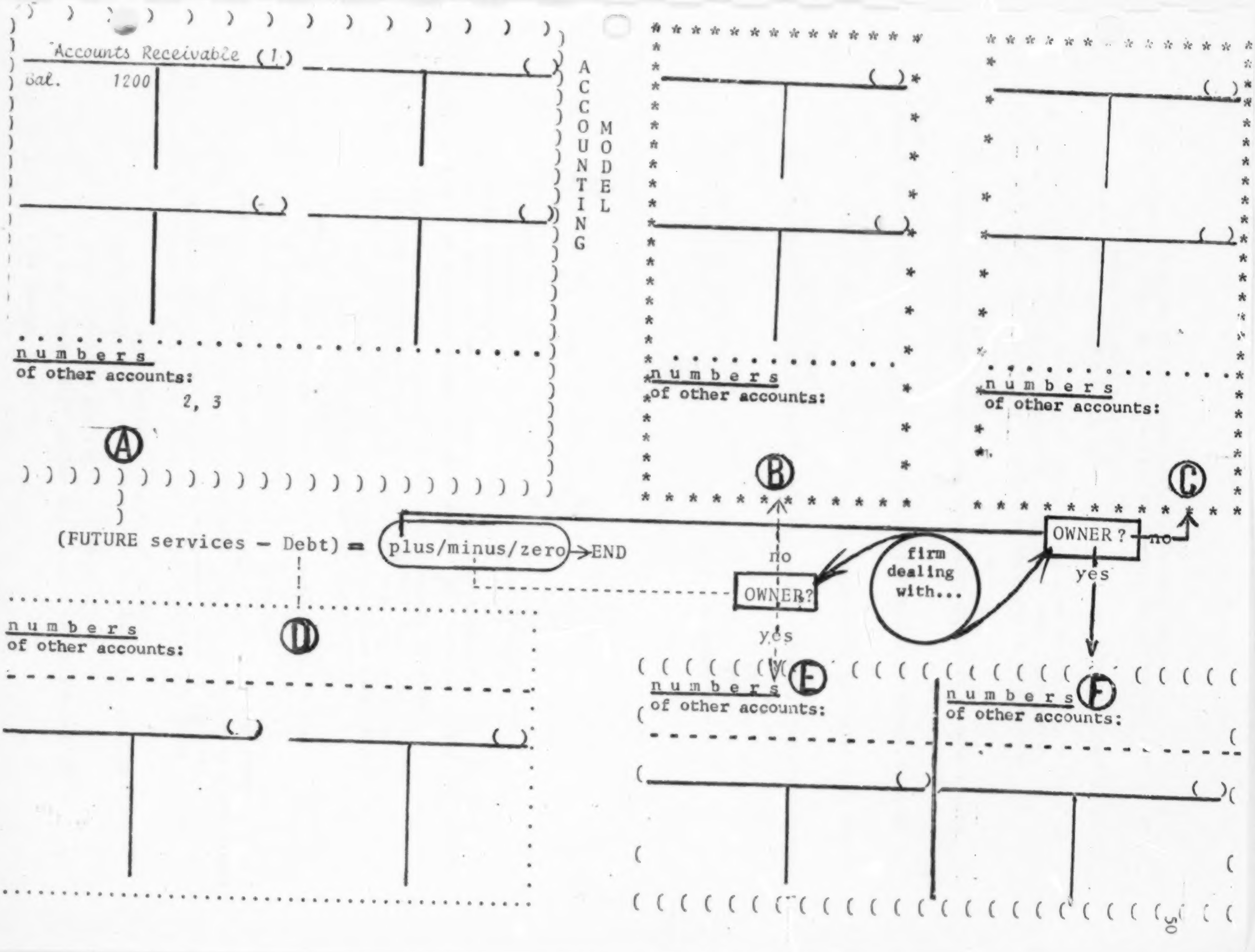
(1)	Accounts Receivable	$1200	
(2)	Accrued Rent Receivable	5	
(3)	Accumulated Depreciation-Plant and Equipment		$240
(4)	Allowance for Bad Debts		3
(5)	Bad Debts		
(6)	Cash	170	
(7)	Cost of Goods Sold	1600	
(8)	Customers' Advances		50
(9)	Deferred Insurance Cost	10	
(10)	Depreciation	40	
(11)	Expense of Selling	100	
(12)	Expired Insurance Costs	5	
(13)	Felix Fleming, Capital		919
(14)	Managerial salaries	40	
(15)	Other Operating Expense	60	
(16)	Plant and Equipment	800	
(17)	Rental Income		10
(18)	Sales		1900
(19)	Sales Returns	100	
(20)	Supplier Payables		1000
(21)	Unpaid Salaries and Wages		8
	Totals	$4130	$4130

1.A. Write titles and balances and identifying number for the following in the T-accounts of appropriate model boxes (as shown for A/Rec.)

(1) Accounts Receivable
(4) Allowance for Bad Debts
(5) Bad Debts
(6) Cash
(13) Felix Fleming, Capital
(18) Sales
(19) Sales Returns

B. Assign all the other accounts to appropriate boxes by writing their identifying numbers in spaces provided. See 2 and 3.

REMOVE the MODEL page and continue. →


Accounts Receivable (1)
Bal. 1200
ACCOUNTING MODEL
numbers of other accounts:
2, 3
Ⓐ
numbers of other accounts:
Ⓑ
numbers of other accounts:
Ⓒ
(FUTURE services – Debt) = plus/minus/zero → END
OWNER?
no
yes
firm dealing with...
OWNER?
no
yes
numbers of other accounts:
Ⓓ
numbers of other accounts:
Ⓔ
numbers of other accounts:
Ⓕ

2. A. It is estimated that ½ of 1% of the month's net sales will prove uncollectible. Record the adjustment in the T-accounts. KEY with (A).

B. After completing requirement 1, and adjustment A above, the Balance Sheet equation should be:

$ 1933 = $ 1058 + $ 875

box(es)	(±) amount
	$
	$
	$

box(es)	(±) amount
	$
	$
	$

box(es)	(±) amount
	$
	$
	$

Since you have assigned the entire ledger to appropriate boxes in the accounting model, balances from one or more boxes combine to give the amounts of the equation. Under each summary amount, show box(es) it summarizes (by letter). By giving amount per box, show that the equation is valid.

C. In the boxes at the right of the original trial balance (page 62) give the NEW balances (zero and non-zero) which the ledger will contain after closing entries have been added (after adjustment A). Don't write anything beside accounts whose balances remain as shown originally.

IF ANY OF THE T-ACCOUNTS IN THE MODEL are affected, enter the closing debit or credit and rule it.

3. In September, the following occurred. Journalize and post all effects to the T-accounts in the model boxes. IDENTIFY BY DATE.

September 5.	Recovered $5 from an account which had been written off as uncollectible in July.
September 10.	Wrote off $9 account of Nellie Bly, $7 account of Hart Crane, and $12 account of John Glen, which are believed uncollectible.

(OMIT EXPLANATIONS)

Record these directly in the T-accounts. (Key by date.)

September 25	Recovered half the John Glen account.
September 29	Summary of other September transactions with customers: (Make a compound entry.)

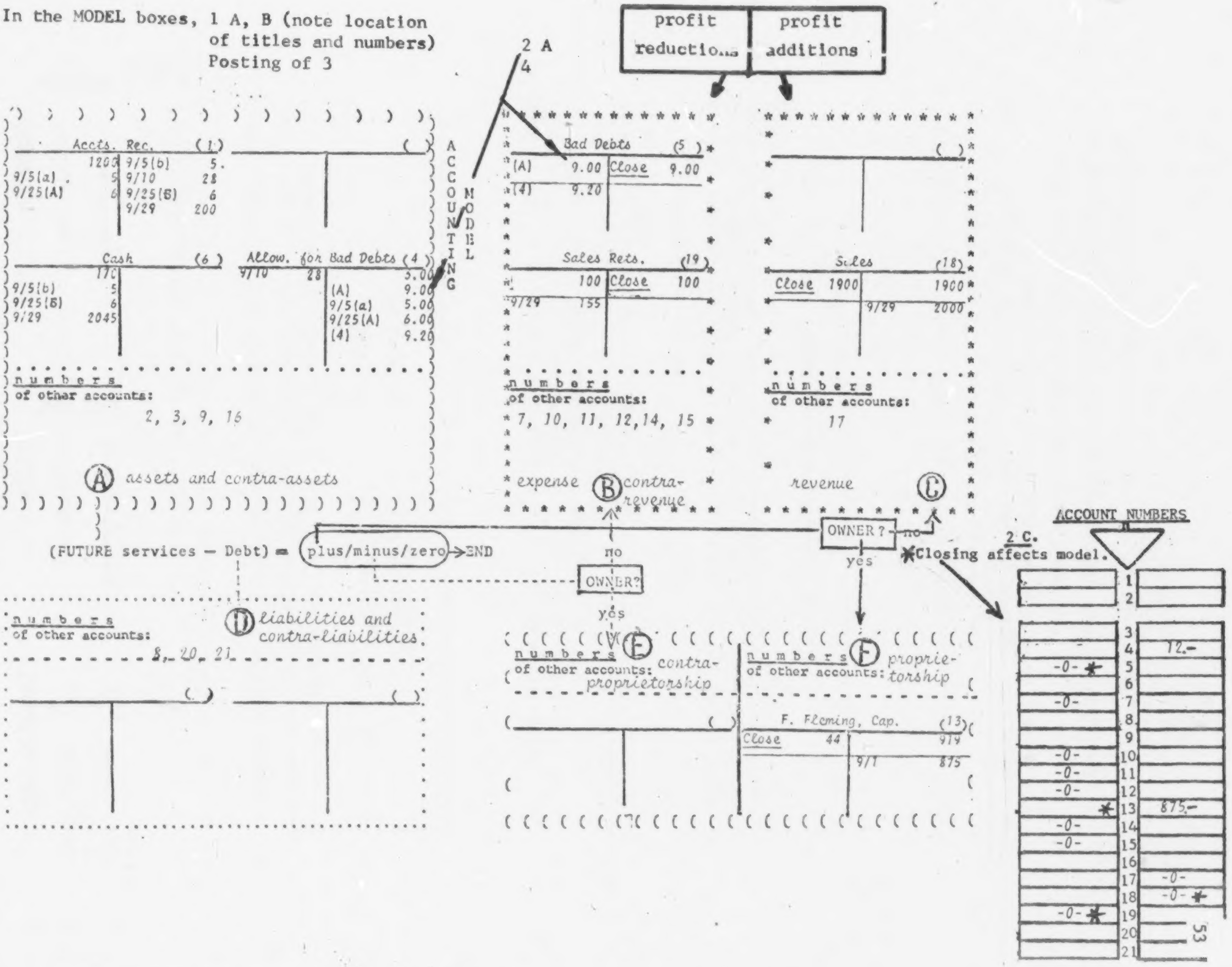
Sales (all on credit)	$2000
Returned by customers	155
Collections (other than Sept. 5 and 25, above) on all accounts	2045

4. ROUNDING the estimate to the nearest 10 cents, enter the appropriate adjustment for credit losses for September in the T-accounts. KEY with **(4)**.

5. Someone has started a September 30, Balance Sheet. Complete it through "Total Current Assets." Assume all other relevant balances were unchanged since September 1.

Felix Fleming
Balance Sheet

In the MODEL boxes, 1 A, B (note location
of titles and numbers)
Posting of 3


2 A
4
profit reductions
profit additions
ACCOUNTING MODEL
Accts. Rec. (1)
1200 9/5(b) 5.
9/5(a) 5 9/10 28
9/25(A) 6 9/25(B) 6
9/29 200
( )
Cash (6)
170
9/5(b) 5
9/25(B) 6
9/29 2045
Allow. for Bad Debts (4)
9/10 28
5.00
(A) 9.00
9/5(a) 5.00
9/25(A) 6.00
(4) 9.20
numbers
of other accounts:
2, 3, 9, 16
Ⓐ assets and contra-assets
Bad Debts (5)
(A) 9.00 Close 9.00
(4) 9.20
Sales Rets. (19)
100 Close 100
9/29 155
numbers
of other accounts:
7, 10, 11, 12, 14, 15
expense Ⓑ contra-revenue
( )
Sales (18)
Close 1900 1900
9/29 2000
numbers
of other accounts:
17
revenue Ⓒ
(FUTURE services − Debt) = plus/minus/zero → END
OWNER?
no
yes
OWNER?
no
yes
2 C.
*Closing affects model.
numbers
of other accounts:
8, 20, 21
Ⓓ liabilities and contra-liabilities
( )
( )
numbers
of other accounts:
Ⓔ contra-proprietorship
numbers
of other accounts:
Ⓕ proprietorship
( )
F. Fleming, Cap. (13)
Close 44 919
9/1 875
ACCOUNT NUMBERS
1
2
3
4 12.-
-0- * 5
6
-0- 7
8
9
-0- 10
-0- 11
-0- 12
* 13 875.-
-0- 14
-0- 15
16
17 -0-
18 -0- *
-0- * 19
20
21

PANEL B

Boggstown Grocery Co.
Income Statement
Year Ended December 31, 1970

Revenue:		
Gross Sales	$2000	
Less: Sales Returns	50	
Net Sales		$1950
Cost of Sales:		
Inventory, January 1	200	
Purchases	880	
	$ 1080	
Inventory, December 31	350	
Cost of Sales		730
Gross Margin on Sales		$1220
Operating Expenses:		
Advertising	$102	
Depreciation - Store Fixtures	40	
Rent	60	
Salaries	480	
Bad Debts	10	
Other General and Administrative Expense	316	
Total Operating Expenses		$1008
Net Income from Operations		$ 212
Less: Interest Expense		12
Net Income		$ 200

THIS IS THE WAY MOST FIRMS (and most authors) REPORT IT.

2. B.

$1933 = $1058 + $875

box(es)	(±)	amount
A	+	$ 1933
		$
		$

box(es)	(±)	amount
D	+	$ 1058
		$
		$

box(es)	(±)	amount
B	−	$ 1954
C	+	$ 1910
F	+	$ 919

E belongs but there are no contra-proprietorship accounts

(until closed)

posting references

3.

5	Accounts Receivable	1	5 00	
	Allow. for Bad Debts	4		5 00
5	Cash	6	5 00	
	Accounts Receivable	1		5 00
10	Allowance for Bad Debts	4	28 00	
	Accounts Receivable	1		28 00

5.

Felix Fleming

Balance Sheet

September 30, 1970

NOT true, or correct, for a period.

Assets			
Current Assets:			
Cash		2226 00	
Accounts Receivable	972 00		
Less: Allowance for Bad Debts	4 20		
Net Accounts Receivable		967 80	
Accrued Rent Receivable		5 00	
Deferred Insurance Cost		10 00	
Total Current Assets			3208 80

PANEL D

AGING ACCOUNTS RECEIVABLE

(a technique for estimating the credit-quality of customer accounts)

An auditor of the J. C. Pence Co. prepared the following "aging of receivables." He assigned each customer's balance in the subsidiary ledger to one of the columns by finding the answer to, "How long past due?" (Credit policy at J. C. Pence called for payment within 60 days.)

AGING OF ACCOUNTS RECEIVABLE

Customer	Total	Not yet due	1-30 days past due	31-60 days past due	Over 60 days past due
A. B. Louis	$ 500	$ 500			
B. L. Max	200			$ 150	$ 50
R. D. Null	800	800			
Others	38,500	$22,550	$10,000	$4,200	$1,750
TOTALS	$40,000	$23,850	$10,000	$4,350	$1,800*
Per cent	100	60	25	11	4

By looking at actual write-offs over several recent years, he found certain relationships to be average.

For example, at the time of year when the accounting cycle was completed, one in four accounts which were 60 or more days past the point of sale had never been collected. Thus he concluded that the $1800*of the Accounts Receivable were over-valued by 25%. Using similar logic, he computed:

$ 450.00 (25% x $ 1,800)*
435.00 (10% x $ 4,350)
200.00 (2% x $10,000)
238.50 (1% x $23,850)
$1,328.50 (estimated necessary provision for eventual defaults)

THE COST OF BORROWED MONEY

The following pages are self-instruction in an accounting topic which often proves needlessly confusing. It is intended for use by anyone who is familiar with the accounting cycle for merchandising firms (and, of course, service businesses). Because of this, you may find us using a synonym for a term with which you are most familiar. We have tried to mention these synonyms where they are first needed, and to connect our terms to an example. You should be able to see what we mean - even though you are used to another label.

This index indicates the topics covered:

Review of recording notes and accrued interest 1
Calculating interest 7

TWO WAYS TO BORROW MONEY

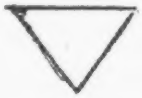
  Discounting a note payable 13
  Discounting an interest-bearing note receivable 16
Reporting a contingent liability 27
Dishonor of discounted note by its maker 34
The "effective rate" of interest 39

FOLLOW THESE DIRECTIONS, carefully.

You will be given information, asked questions, or asked to follow instructions. The instructions appear as needed.

In most, but not all, cases you will be given "feedback" on your responses. Look for these answers; and, if you didn't agree, re-examine the frame. If you still don't understand, make a note to ask your instructor.

When more than one frame appears on a page, a cover sheet should be used to hide the answers until you've made yours. If you fold the gripe sheet horizontally it will serve the purpose.

This  shows where the top of a cover sheet should go.

Except as indicated, you should ignore a left-hand page and work only on the right-hand pages.

What time is it? (Make a note.) Report the time you actually spend working on the lesson in the space provided on the gripe sheet.

Go on with the lesson.

This lesson uses a variety of forms with which you may not be familiar. Use of these forms is illustrated in a supplement (green pages, yellow cover) entitled, "The Accounting Model". Make use of it at any time. If you have not received it with another lesson which you used earlier, it is the next thing you will find.

Look at the supplement, now, and decide whether 1. (on the cover) is a review you need before starting this specific topic. When you do start the first frame of this lesson, note the number AND part of any frame which you do not answer correctly in the gripe sheet that follows on this page. Comment on your difficulty, in any way you care to. Suggested improvements will be especially appreciated.

Note your starting time. ________

Report your total time in minutes: ________

RESPONSES (missed)	CORRECTIONS (& comments)

RESPONSES (missed)	CORRECTIONS (& comments)

THE COST OF BORROWED MONEY

This lesson assumes that you already know how to record the issuance or receipt of a promissory note, the payment or receipt of interest and settlement of the face of the note, IF the amounts are given.

A brief review is provided, however. Choose the answers to parts A and B to determine whether you study or skip it.

EVENT: We borrow $1000 for 60 days at 6% interest.

A. Circle the number of the correct journal entry to record the event.

1.	*Cash*	1000 00	
	Notes Payable		1000 00
	(Explanation omitted.)		
2.	*Cash*	1000 00	
	Interest Expense	10 00	
	Notes Payable		1010 00
	(Explanation omitted.)		
3.	*Cash*	1000 00	
	Interest Expense	60 00	
	Notes Payable		1060 00
	(Explanation omitted.)		

B. Circle the number of the analysis for recording the collection of the note issued in A.

Identify transactions

1st line only ↓	ACCOUNT TITLES	CHANGES in				Owner Equity CHANGES					
		ASSETS		LIABILITIES		PROFIT ADDITIONS		PROFIT REDUCTIONS		OTHER	
		DR	CR	DR.	CR	DR	CR	DR	CR	DR.	CR
1.	*Notes Payable*			1010 00							
	Cash		1010 00								
2.	*Cash*		1000 00								
	Notes Payable			1000 00							
3.	*Cash*		1060 00								
	Notes Payable			1060 00							
4.	*Cash*		1010 00								
	Interest Expense							10 00			
	Notes Payable			1000 00							

Use of the above form is illustrated in "THE ACCOUNTING MODEL" supplement, p. 6.

* *

FIND ANSWERS at the top of page 2.

If your answers in frame 1 were:

A.

	Account	Debit	Credit
1.	Cash	1000 00	
	Notes Payable		1000 00

Identify transactions

B. 1st line only

	ACCOUNT TITLES	CHANGES in				Owner Equity CHANGES					
		ASSETS		LIABILITIES		PROFIT ADDITIONS		PROFIT REDUCTIONS		OTHER	
		DR.	CR.	DR.	CR.	DR	CR	DR	CR	DR.	CR
4.	Cash		1010 00								
	Interest Expense							10 00			
	Notes Payable			1000 00							

continue here. Otherwise go to frame 3 next page right away.

- -

2. If 60 day's interest on our note is $10 at its maturity, what adjustment is needed if the accounting period ends 40 days after the note was issued?

CIRCLE 1 or 2, if either is correct, or

you journalize the correct adjustment at 3.

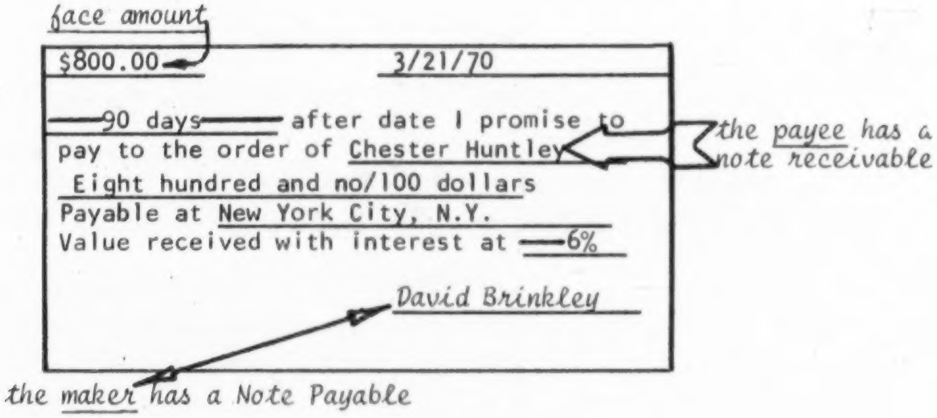
	Account	Debit	Credit
1.	Interest Expense	6 67	
	Interest Payable		6 67
2.	Interest Expense	3 33	
	Accrued Interest Payable		3 33
3.			

For the ANSWER to this frame, see the BOTTOM of page 3 (i.e. SKIP frame 3) page 3.

3. If you answered 2 or 3, in A of frame 1, you have forgotten that notes are recorded at face value only.

Or, Perhaps you have not used the accounts, "Notes Receivable" or "Notes Payable" before.

This is a PROMISSORY NOTE.



face amount

$800.00 3/21/70

90 days after date I promise to pay to the order of Chester Huntley

Eight hundred and no/100 dollars

Payable at New York City, N.Y.

Value received with interest at 6%

David Brinkley

the payee has a note receivable

the maker has a Note Payable

When you feel ready, journalize the following:

Collected the $100 note of Frank Sinatra along with the accumulated interest of $4.

	17			

Whose books are we keeping in this transaction? (circle)

Cover remainder of page.

the maker's the payee's

for this answer, next page

ANS. 2 ① should be circled.

2/3 of the $10 which will be paid at maturity is an unrecorded debt (until entry 1 is recorded). It is important, as you know, because the company's Income Statements (for this year and next) should divide the $10 cost of borrowing in proportion (40/20) to the days in each period when the money can be used.

FRAME 4 IS NEXT

Ans. 3

17	Cash		104 00	
	Notes Receivable			100 00
	Interest Earned			4 00
	Notes and interest received from			
	F. Sinatra.			

OR, Interest Income, etc. [✓ the payee's] ("Collected the....)

← NOW return to frame 2.

AFTER 2 4. The correct adjustment accomplishes this:

CURRENT YEAR'S STATEMENTS		So that INCOME STATEMENT(S) OF FUTURE YEAR(S) can report:
Correctly timed (CIRCLE) [✓ expense] income revenue will be $ 6.67 in this year.	The current Balance Sheet must, therefore, report (COMPLETE ONE LINE OR THE OTHER) [✓ an accrued] asset [✓ liability] of $ 6.67 a deferred asset liability of $ ______	$ 3.33 of expense $ ______ of income $ ______ of revenue instead of $ 10.00

a. Is (x) or (y) the correct entry when the note matures and is paid?

(Disregard reversing entries, if familiar.)

Cross out ☒ the incorrect box.

b. Why is it better? (underline)

expense is all recorded in the period paid

expense is divided between this year and next

(y)

Interest Expense

other interest (adj.1)	$ 6.67	closed for this year	
(y)	3.33		

Interest Payable

(y)	6.67	(adj1)	6.67

Cash

Balance	$ XX	(y)	1010

Notes Payable

(y)	1000	Bal.	1000

(x)

Interest Expense

this year's interest!	$	closed for this year	
(x)	10		

Notes Payable

(x)	1000	Bal.	1000

Cash

Bal.	$$$$$	(x)	1010

ANS. 4.

Interest Expense

other interest $ (adj.1) 6.67	closed for this year
(y) 3.33	

Interest Payable

(y) 6.67	(adj1) 6.67

Cash

Balance $ XX	(y) 1010

Notes Payable

(y) 1000	Bal. 1000

~~(x) puts $10 expense in year of payment.~~

Correct expense for the year of payment

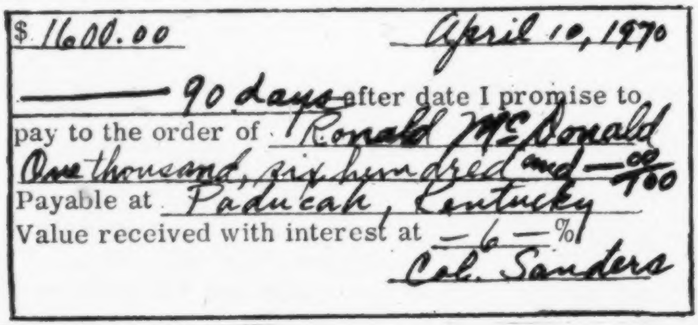
1/60 th of the $10 accrues each day.

- -

5. There will be $24 interest collected at the maturity of the note which we accepted in the transaction analyzed below. You enter the adjustment effect if the 90-day note was issued August 16.

Identify transactions 1st line only	ACCOUNT TITLES	CHANGES in ASSETS Dr.	CHANGES in ASSETS Cr.	CHANGES in LIABILITIES Dr.	CHANGES in LIABILITIES Cr.	Owner Equity CHANGES PROFIT ADDITIONS Dr.	PROFIT ADDITIONS Cr.	PROFIT REDUCTIONS Dr.	PROFIT REDUCTIONS Cr.	OTHER Dr.	OTHER Cr.
8/16	Notes Receivable	1600 —									
	Accounts Receivable		1600 —								
—	To adjust on Aug. 31										
8/31											

Your analysis should record 15 days' accrued interest. Here is the note.



$ 1600.00 April 10, 1970

90 days after date I promise to pay to the order of Ronald McDonald

One thousand, six hundred and 00/100

Payable at Paducah, Kentucky

Value received with interest at 6 %

Col. Sanders

Are the transactions above recorded by the maker, or is it the payee?

(underline which, in all cases like this)

Who is that? Ron, or The Colonel?

ANS. 5.

Identify transactions

line only	ACCOUNT TITLES	CHANGES in ASSETS Dr	ASSETS Cr	LIABILITIES Dr	LIABILITIES Cr	Owner Equity CHANGES PROFIT ADDITIONS Dr	PROFIT ADDITIONS Cr	PROFIT REDUCTIONS Dr	PROFIT REDUCTIONS Cr	OTHER Dr	OTHER Cr
8/16	Notes Receivable	1600 —									
	Accounts Receivable		1600 —								
—	To adjust on Aug. 31										
8/31	Interest Receivable	400									
	Interest Income						400				

1/6 of $24

the payee (who is Ron.)

- -

6. Which is the correct effect of recording this transaction?

TRANS. Accepted a $400, 90 day, 6% note in exchange for merchandise.

I. Circle A, B or C.

A.

Merchandise

1200	(a) 400

Notes Receivable

(a) 400	

B.

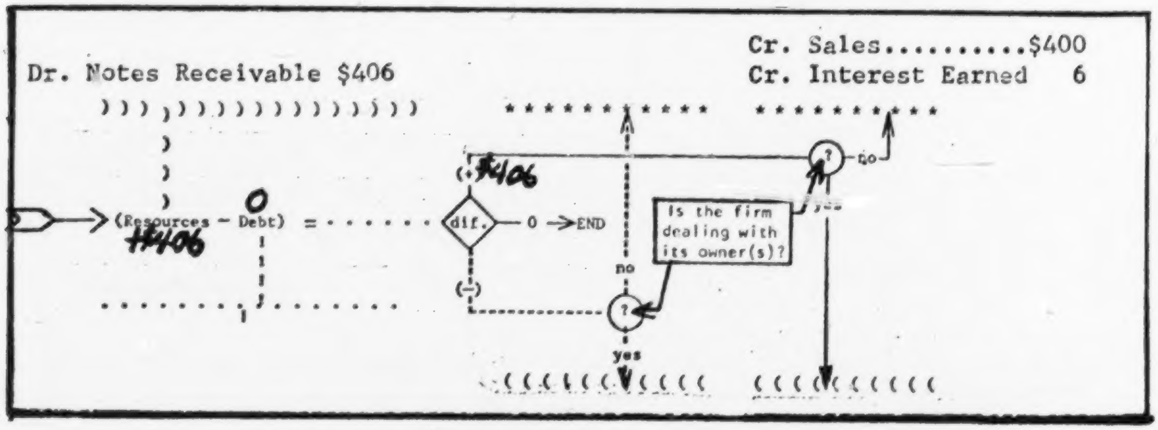
Sales

	2000
	(b) 400

Notes Receivable

200	
(b) 400	

C.



Dr. Notes Receivable $406

Cr. Sales..........$400

Cr. Interest Earned 6

II. The rule that accounts for notes must be changed at face value is violated in _____, above.

The mistake in _____ is putting a selling price where a cost price belongs.

ANS. 6. I, B.

Sales

	2000
	(b) 400

Notes Receivable

200	
(b) 400	

II. C

A

Calculating interest:

7. The money-cost to a borrower is the amount by which the repayment exceeds the amount borrowed. It is computed according to a contract--usually a promissory note. Though we are assuming you can record interest transactions, the next several frames have to do with calculating simple interest.

If you aren't familiar with the calculation of interest, go to the NEXT FRAME, NOW.

If you can calculate interest, SKIP, after you calculate correct interest amounts for a and b.

	Interest amount
a. face of note, \$2400 interest rate, 5% time of note, 30 days	\$________
b. face of note, \$720 interest rate, 8% time of note, 5 months	\$________

CHECK YOUR ANSWERS on page 9

---

8. An interest rate is a fraction. It indicates what part of the principal (i. e. the face of the note) must be paid for using the principal for a whole year.

Thus, it will cost \$ 50 to borrow \$1,000 for one year when the rate is 5%.

Or, \$300 may be borrowed for a year by repaying \$321 at a 7% interest rate.

Can you compute the interest amount for \$200 borrowed for a year at 4%?

Write the amount here, \$________.If you have trouble, skip to frame 10 (p. 10)

When the time of a note is less than a year (the usual case), a fraction of the annual amount is charged. A 3-month, 5%, \$1000 note will cost \$12.50.

INTEREST YEAR When time is given in days, however, an arbitrary 360 day year is assumed. \$300 for 60 days at 7% is \$3.50.

What is the interest on \$200 for 90 days at 4%?

circle: \$8 \$20 \$80 \$2 or (you fill it in) \$________.

ANS 8 A. $8 (4/100 x $200, or .04 x $200).

B. $2 ($8 for a year x 90/360). IF YOU ANSWERED CORRECTLY, good!

Do frame 7, now, if you can.

IF you just took 4% of $200 here YOU MISSED A VITAL POINT. RE-READ the frame, then, IF YOU STILL NEED MORE HELP, GO TO FRAME 11.

Otherwise, FRAME 9, next.

---

9. A. Interest calculations are very subject to errors in arithmetic. Very often, however, errors are obvious if the result is compared to a rough estimate of the correct answer.

EXAMPLE 1: $10,000 borrowed for 60 days at 6% was computed this way:

6/100 x 10,000 x 60/360 = $1,000

Test for reasonableness: $\frac{\$1000 \text{ interest}}{\$10,000 \text{ principle}} = 10\%$

This would be correct for a 6% note only if it ran much more than a year. $1000 is wrong.
Then you might think:
"It must be less than $600; a lot less."
"Near to 1%, or less?"
"Well, 60/360 of 6%. Oh, it's exactly 1%."
The answer is $100.

EXAMPLE 2: $850 borrowed for 40 days at 5%.
The interest is calculated at $4.72.

"That's less than 1% ($8.50). Should it be?"
"Yes, 40/360 is 1/9. The rate would have to be 9% to have 1% of $850 as an answer."
"$4.72 is a little over half of 1% - at least it's close."

You recompute example 2.

$850 x 5/100 = $________ (annual interest) x 40/360 = $4.72 is right (circle) ✓

$________ (or, you fill it in)

B. **Underline your estimate.**

1. a 4-month, 8% $240 note will have interest which is:

less than $2.40
nearer $2.40 than $4.80
over $4.80 but less than $10
$17.20 or over
between $10 and $17.20

---

2. Interest on a 5%, 100-day, $1900 note will be:

less than 1% of $1900
nearer to 1% than to 5% of $1900
more than $190
nearer to 5% than to 1% of $1900

C. The sum of the B interest amounts (nearest cent) should be $32.70.

Compute each and verify: B. 1. $.

2. $.

Sum $.

Remove and INVERT the next (ANSWER PANEL) page for answer 9.

Frame 10 starts p. 10.

ANSWER PANEL

ANSWER 7.

a. $10
b. $24

IF you DIDN'T get BOTH, return to frame 9.

WHEN YOU HAVE ANSWERED 7 CORRECTLY, skip to frame 12. page 10, *last frame*

ANSWER 10. 33 1/3%

16% (16/100)

Continue with 11 on p. 10.

ANSWER 12

I. face (value)
II. a. $303.50 (300 x 7/100) per year x 60/360 = 3.50 plus face.
b. $5056.25 ($5,000 plus 45/360 x $450.00) (9% of $5000)

Top of page 11 is next.

ANSWER 9

A. *$42.50 (x 40/360) = $4.72*

B. 1. over $4.80 but less than $10
2. nearer to 1% than to 5% of $1900

C. B1 = *$ 6.40*
2 *26.39*
$32.79

NOW GO TO FRAME 7.

(If you've missed before, change your answers.)

ANSWER 11

1. (6/12 x 8%)
2. (4% x 90/360)
3. (7% X 45/360)

Now RETURN to frame 9.

ANSWER 13

a. $277.75 ← $275 +

interest:
2.75 1 1
(~~$275~~ X ~~4/100~~ X ~~90/360~~)
or (1/4 of 4%) = 1% (X $275)

b. $961.88 ← $950 + (75/360 X $57.00) = $11.88
interest for a year

Last anwer on this page. Continue on p.11.

10. 4% = 4/100 (If that's all you needed to know, return to frame 9 and continue.)

If that doesn't help, do this if you can.

Example: $\frac{1}{2}$ = 1 ÷ 2 = .50 × 100 = 50%

Express these fractions as percents:

1/3 = _______%; 4/25 = _______% *Check these answers on page 9 (ANSWER PANEL page).*

---

11. Unless the terms specifically contradict it, an interest rate is an annual rate.

"1% per month" is a 12% interest rate and means $12 interest on $100 borrowed for a year.

"$500 at 5% for 60 days" does NOT mean 30% (or $150) interest for a whole year. (Read "... at 5% (Per year, understood) for 60 days."

Thus, a 6%, 60 day note charges 1% of principal as interest.

$$(60/\underline{360} \times 6\%) = 1\%$$

↑ (days in the "interest year," remember)

Complete expressions for these cases:

1. A 6 month, 8%, note will cost 4% of the principal, or $\left(\frac{\_\_\_}{12} \times 8\%\right)$ ← (you fill it in)

What should the principal be multiplied by?

2. for a 90-day, 4% note: (___% × 90/____)

3. for a 7%, 45-day note: ( ) *Check answers on (inverted) page 9.*

---

12. I. Every note has two values. The one used to increase and decrease Notes Receivable or Payable accounts is

______________ value.

II. When the interest is added to the amount of the principal the sum is the maturity value.

The maturity value of a $2400, 5%, 30-day note is:

$$\begin{array}{r} \$2400 \\ \underline{10} \\ \$2410 \end{array}$$

What is the maturity value of these notes?

a. $300 at 7% for 60 days: $_________

b. $5000 for 45 days at 9%: $_________

III. Check up! Will II.a. interest be nearest to (circle):

$.30 $3.00 or $30.

II.b interest will be nearer to:

1% of 5,000

10% of 5,000

For answers, see middle of p. 9.

13. If you had both parts of 12 II correct, go to frame 14, now.

Otherwise, what are these maturity values? (Check them for reasonableness.)

a. $275 for 90 days at 4%

Maturity Value $__________

b. $950 at 6% for 75 days.

Maturity Value $__________

INVERT page 9. Check near middle for these answers.

14. In the case of "simple interest", the cost of borrowing is the difference between the two values of the note("face" and "maturity".)

Turn the pink panel over. At the top of the back is a partially-complete analysis for payment of the $300 note from 12, IIa by its maker.

The accounting model below it shows how to determine the effect on proprietorship, which is step 7 in the analysis. STUDY IT FIRST, then:

A. Fill in the appropriate blanks for step 7 in the analysis.

B. Journalize the whole entry here (omit explanation).

C. Analyze the collection of the $5000 note in b. of 12, II.

Step 1. (Circle a,b, or c) a. It is a CUSTOMER. [✓ b.] It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2.
____
____
____

Step 3.
MORE or LESS
$______ | $______
$______ | $______
$______ | $______

Step 4.
____
____
____

Step 5.
MORE or LESS
$______ | $______
$______ | $______
$______ | $______

Step 6.
ZERO ___ (✓)
$+ ______ OR
$- ______

ZERO ___ (✓)
$+ ______ OR
$- ______

Step 7. If not zero, show account and amount. ZERO _____ (✓)

__________ $______ expense
__________ $______ investment
__________ $______ disinvestment
__________ $______ income
__________ $______ revenue

answer

ANSWERS TO 14

A.

Step 7. If not zero, show account and amount. ZERO ____ (✓)

Interest Expense $ 3.50

expense ____ $ ____

investment

____ $ ____

disinvestment ____ $ ____

income ____ $ ____

revenue

B.

10	Notes Payable		3000 00	
	Interest Expense		3 50	
	Cash			3003 50
	Paid note and interest.			

C.

Step 1. (circle a,b, or c) a. It is a CUSTOMER. [✓ b.] It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2.	Step 3. MORE	Step 3. LESS
Notes Receivable	$	$5000.-
Cash	$5056.25	$
	$	$

Step 6. ZERO (✓) $+56.25 OR $- ____

Step 4. ____

Step 4.	Step 5. MORE	Step 5. LESS
	$	$
	$	$
	$	$

ZERO ✓ (✓) $+ ____ OR $- ____

Step 7. If not zero, show account and amount. ZERO ____ (✓)

____ $ ____

expense

____ $ ____

investment

____ $ ____

disinvestment

Interest Income $ 56.25

income

(Interest Earned $ 56.25)

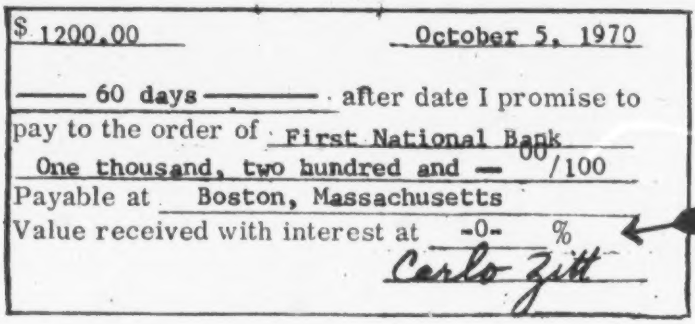
revenue

EITHER title: Classifying the account as revenue is acceptable, but not as accurate.

TWO WAYS TO BORROW MONEY

Discounting our own note:

15. Here is a promissory note with a $1200 face value.



$ 1200.00 October 5, 1970

—— 60 days ——— after date I promise to
pay to the order of First National Bank
One thousand, two hundred and — 00/100
Payable at Boston, Massachusetts
Value received with interest at -0- %
Carlo Zitt

zero interest rate

1. What is its maturity value? $__________

A note with a zero rate of interest is known as a non-interest-bearing note. You might expect it to be used by relatives or very good friends, but surprisingly, banks often grant loans on notes which bear no interest.

In this case, the cost of borrowing is known as discount.

Example: An entity gives its own 60-day note for $1200 to its bank. The bank's discount rate is 8%. The bank views the transaction as buying an asset, the right-to-collect $1200 at a specified time. It will calculate its required earnings, which will be the entity's cost of borrowing, as follows:

Maturity value X discount rate X fraction of year = amount of discount

$1200 X 8/100 X 60/360 = $16

It will then calculate the proceeds - the amount it will actually lend.

Maturity value - discount = proceeds

$1200 - $16 = $1184

2. Finish analyzing the borrower's transaction. Make sure you use the right amount columns. NOTE that + and - in all owner's equity refer to its total and NOT the account. He still calls the cost "interest" in his accounts.

Illustrated Use: p. 6, ACCOUNTING MODEL SUPPLEMENT.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
				expense	income	revenue	Other
Oct. 5	Cash	+ 1184 -	+ -	+ -	+ -	+ -	+ -
	Notes Payable	+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
		+	+	+	+	+	+

16. Did you use the accounting model to analyze?

Why should you use a "temporary proprietorship" account? (Check.)

____(✓) It's dealing with its owner.

____(✓) It isn't.

Is the difference a positive or negative amount?

ANS. 15 and 16

1. $1200 (maturity value)

2.

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
			expense	income	revenue	Other
Oct. ⑤ Cash	+ 1184 -	+ -	+ -	+ -	+ -	+ -
○ Notes Payable	+ -	+ 1200 -	+ -	+ -	+ -	+ -
○ Interest Expense	+ -	+ -	+ - 16	+ -	+ -	+ -

(16)

✓It isn't.
Negative amount.

Definition of
Expense

---

17. It should be noted that "discounting a note at 8%" is not the same as paying 8% simple interest.

The comparable case for Carlo Zitt would be an 8%, 60-day note for $1184.

The maturity value of this note would not be $1200.

a. Would it be more or less?

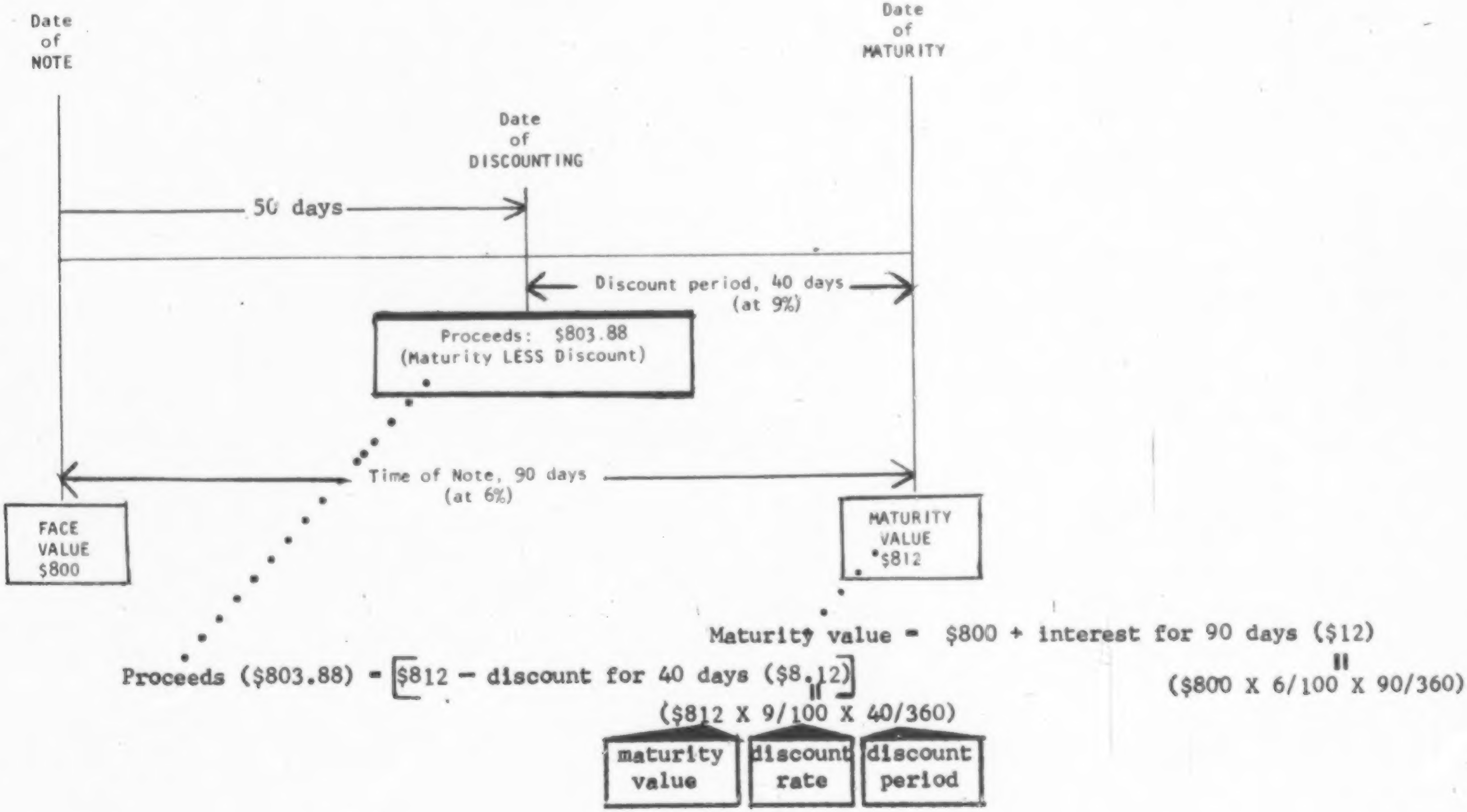
b. Does that mean that "8% discount" is more expensive borrowing than 8% interest, or is it less expensive?

REMOVE the
next page, &
continue.

PANEL A

Discounting an INTEREST-BEARING note receivable:

Example - The First National Bank buys, from our firm, one of our customer's 6%, 90 day, notes. The face of the note is $800, and the bank's discount rate is 9%. When discounted, the note has 40 days to run before it is due.


Date of NOTE
Date of DISCOUNTING
Date of MATURITY
50 days
Discount period, 40 days (at 9%)
Proceeds: $803.88 (Maturity LESS Discount)
Time of Note, 90 days (at 6%)
FACE VALUE $800
MATURITY VALUE $812
maturity value
discount rate
discount period

Maturity value = $800 + interest for 90 days ($12)

($800 X 6/100 X 90/360)

Proceeds ($803.88) = [$812 – discount for 40 days ($8.12)]

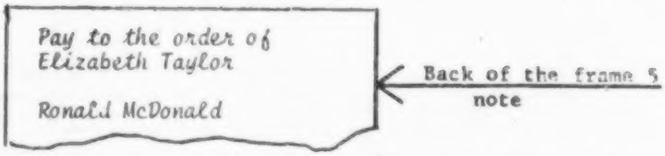
($812 X 9/100 X 40/360)

ANS. 17. a. less ($1184 X 8/100 X 60/360) + 1184 = $1199.79
b. (8% discount is) more expensive.

- - - - - - - - - - - - - - - - - -

Discounting an interest-bearing note receivable:

18.


Pay to the order of
Elizabeth Taylor

Ronald McDonald

Back of the frame 5 note

Because notes, like bank checks, are negotiable instruments, the illustrated endorsement would give Miss Taylor the right to collect the maturity value of the note on its due date.

Banks often buy notes endorsed in their favor on a discounted basis, just as they buy a maker's own note. (The significance of negotiability is that the maker of the note need not agree to the sale, but must pay any holder (endorsee) at maturity.)

Panel A provides an example. Note the following:

1. The proceeds are, as before, (maturity value MINUS discount). One added complication is that before the discount can be found, maturity value must be calculated. It isn't face, as with a non-interest-bearing note.
2. The example involves two different interest rates, as will often be the case.
3. The "discount period", as well as the time of the note, is important to determining the price the bank will offer.

Which period does the lender (i.e., the bank) get paid for? (underline)
first fifty days last forty days

Here is the journal entry to record the receipt of the money:

	Cash		803 88	
	Notes Receivable Discounted			800 00
	Interest Income			3 88
	Collected proceeds of discounted note			
	as follows:			
	(1) Maturity value = $812			
	($800 x 6/100 x 90/360) + 800			
	(2) Discount = $8.12			
	812 x 9/100 x 40/360			
	(3) Proceeds = $803.88			
	($812 - $8.12)			

Complete a transaction analysis on which it would be based. Notes Receivable Discounted is a contra-asset account. Show what its credit does to total assets.

ACCOUNT TITLE	Asset change	Liab. change	CHANGE in Owner's equity			
			expense	income	revenue	OTHER
	+ -	+ -				+ -
	+ -	+ -				+ -
	+ -	+ -				+ -

ANS. 18. last 40 days

ACCOUNT TITLE	Asset change	Liab. change	CHANGE in Owner's equity			
			expense	income	revenue	OTHER
Cash	+ 803.88					
Notes Receivable Discounted	− 800.00					
Interest Income				3.88		

19. In Panel A no part of the calculation is based on the 50-day period for which the entity held the note. The bank sets the terms. Let's see what can happen if the note is discounted only 10 days after it was issued.

Maturity value remains at $812. What is the discount for the 80 days for which the bank would charge?

$________

What proceeds would be collected?

$________

ANS. 19 $16.24 (812 X 9/100 X 80/360)

$795.76 ($812.00 - $16.24)

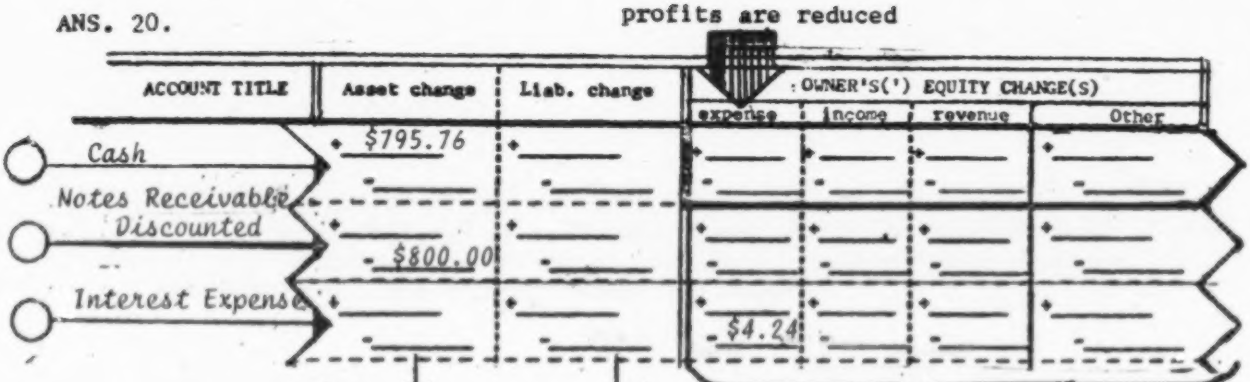
20. Are profits increased or decreased when the note is exchanged for the proceeds of $795.76 which apply to the above case?

Prove your answer by an analysis. Use the contra-asset for reducing Notes Receivable.

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
			expense	income	revenue	Other

21. If you need to reduce profits, but weren't sure what account to use in 20, call it "Interest Expense". Fix it if you need to.

ANS. 20.



			OWNER'S(') EQUITY CHANGE(S)			
ACCOUNT TITLE	Asset change	Liab. change	expense	income	revenue	Other
Cash	+ $795.76					
Notes Receivable Discounted	- $800.00					
Interest Expense			- $4.24			

Proof: NET changes in the basic accounting equation. (minus $4.24 — 0) = minus $4.24

22. If the proceeds from discounting a note receivable are less than the credit to Notes Receivable Discounted, Interest Expense will make up the difference.

1. Interest Income is earned, however, if proceeds are greater than the value at which Notes Receivable was increased. The proceeds are the "discounted value".
   At what value are accounts for notes always changed? ____________value.

In the following cases, indicate how much Interest Income will be credited, or Interest Expense debited when the proceeds from discounting the note receivable are received. (Fill the approriate blank.)

2. A. The maturity value of the note is $5056.25 and the discount at 8% is $11.24. (Face, $5000)

dr. Interest Expense, $________ cr. Interest Income, $_______

B. Maturity value of the note: $303.50. 60days before maturity it is discounted at an 8% dicount rate. (Face $300)

dr. Interest Expense, $________ cr. Interest Income, $________

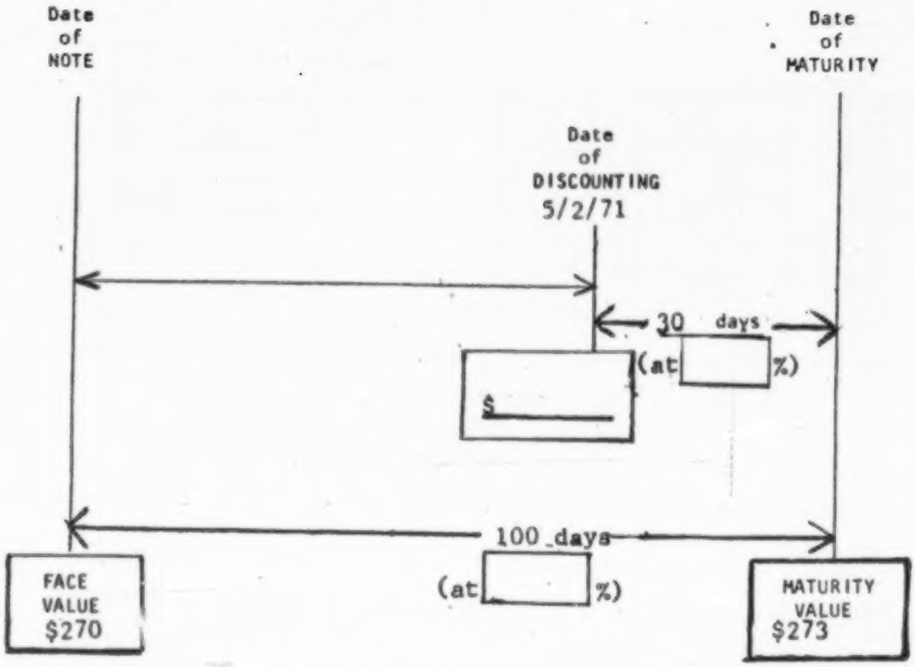
C. Face of the note, $900; terms 90 days at 6%. After holding for 50 days, it is discounted at 9%.

dr. Interest Expense, $________ cr. Interest Income, $_______

****
REMOVE THE (NEXT)
PAGE OF ILLUSTRATIONS
TO FIND ANSWERS.
****

ILLUSTRATIONS

for
23.


Date of NOTE
Date of DISCOUNTING 5/2/71
Date of MATURITY
30 days
(at %)
$
100 days
(at %)
FACE VALUE $270
MATURITY VALUE $273

24-C alternatives:

a.

Notes Receivable				Notes Receivable Discounted			
2/1	500	5/2	270				
2/21	270						
3/20	1230						
3/25	270						

b.

Notes Receivable				Notes Receivable Discounted			
1/12	600	3/12	600			5/7	270
2/1	1730						
2/21	270						
2/25	270						

c.

Notes Receivable				Notes Receivable Discounted			
1/6	1730	3/21	1000	3/21	1000	1/20	1000
1/20	1000					5/2	270
2/21	270						
2/23	270						

Discounted note had matured.

d.

Notes Receivable				Notes Receivable Discounted			
2/1	500	4/1	500			4/10	1500
2/21	270	5/1	100			5/2	270
3/20	1500						
3/30	2270						
4/1	100						

ANS. 22. face (value)

A. cr. Interest Income, $45.01

(5045.01 proceeds minus $5000 face)

. . . .

B. dr. Interest Expense, $0.55

$300 face minus ($303.50 X 8/100 X 60/360)

. . . .

C. cr. Interest Income, $4.36

Maturity val.	$913.50
less discount	9.14(40 days
proceeds	$904.36
less face	900.00
Interest........	$ 4.36

Refer to the yellow page.

23. The diagram at the TOP of page 19 represents the following:

On May 2, we discounted one of our customer's 4%, 100 day notes at the Local Bank. The discount rate charged by this friendly bank was 6%.

A. Fill in the diagram with:

interest rate

discount rate

B. To compute the proceeds for 5/2/71:

($273 - discount)

Write an expression to compute the discount.

discount = ( )

C. If you're sure you can, compute the proceeds. If you want to check B, first go to the next frame now.

(Enter proceeds in the diagram.)

24. The expression for the discount is (273 X 6/100 X 30/360)

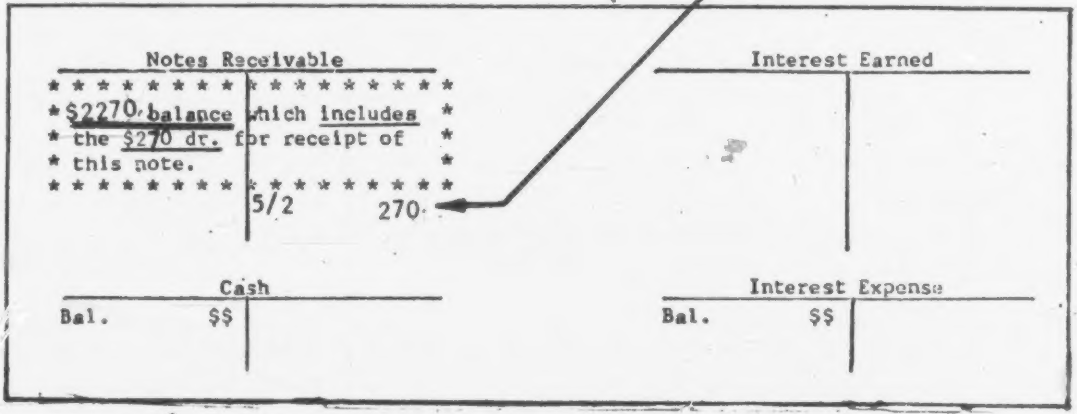
1/12 of the annual discount on maturity value.

A. Compute the discount and proceeds and enter the latter in the diagram on page 19, if you haven't.

B. Enter the date of the note and its maturity date in the diagram. (Leap years are evenly divisible by 4.)

Need a calendar? See Panel B, (green)

C. IF A CONTRA-ASSET ACCOUNT IS NOT USED, this is a correctly-posted T-account for May 2.


Notes Receivable
$2270 balance which includes the $270 dr. for receipt of this note.
5/2
270
Interest Earned
Cash
Bal.
$$
Interest Expense
Bal.
$$

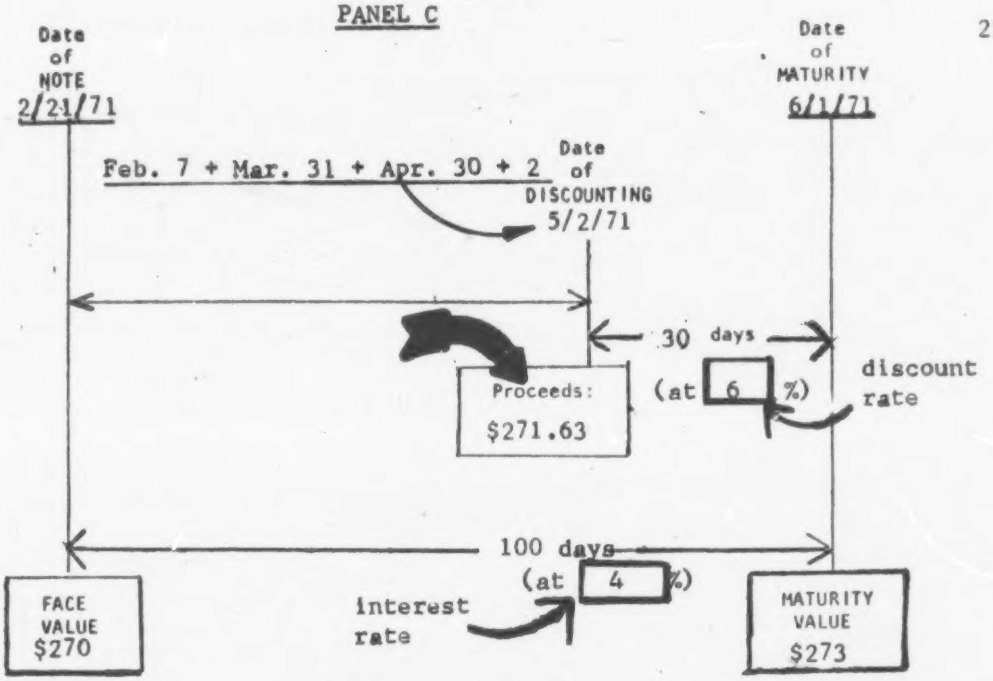
1. You enter the rest of the entry for the receipt of the proceeds.

2. Two of the examples at the BOTTOM of page 19 are possible equivalents of Notes Receivable in (1) above. The firms use the contra-asset, however. Circle the two letters of the correct equivalents.

a b c d

PANEL C

ANS. 23.
& 24.
A and B


Date of NOTE
2/21/71
Date of MATURITY
6/1/71
Feb. 7 + Mar. 31 + Apr. 30 + 2
Date of DISCOUNTING
5/2/71
30 days
(at 6 %)
discount rate
Proceeds:
$271.63
100 days
(at 4 %)
interest rate
FACE VALUE
$270
MATURITY VALUE
$273

discount= (273 X 6/100 X 30/360) = $1.37

- -

(24) C 1.

Notes Receivable	
* $2270 balance which includes the $270 dr. for receipt of this note. *	
	5/2 270.←

Interest Earned	
	5/2 1.63

Cash	
Bal. $$	
5/2 271.63	

Interest Expense	
Bal. $$	

2. b and c are correct
(a puts the credit where it will go when there is no contingent liability.

d shows that $2270 worth of notes are owned, instead of $2000.)

* *

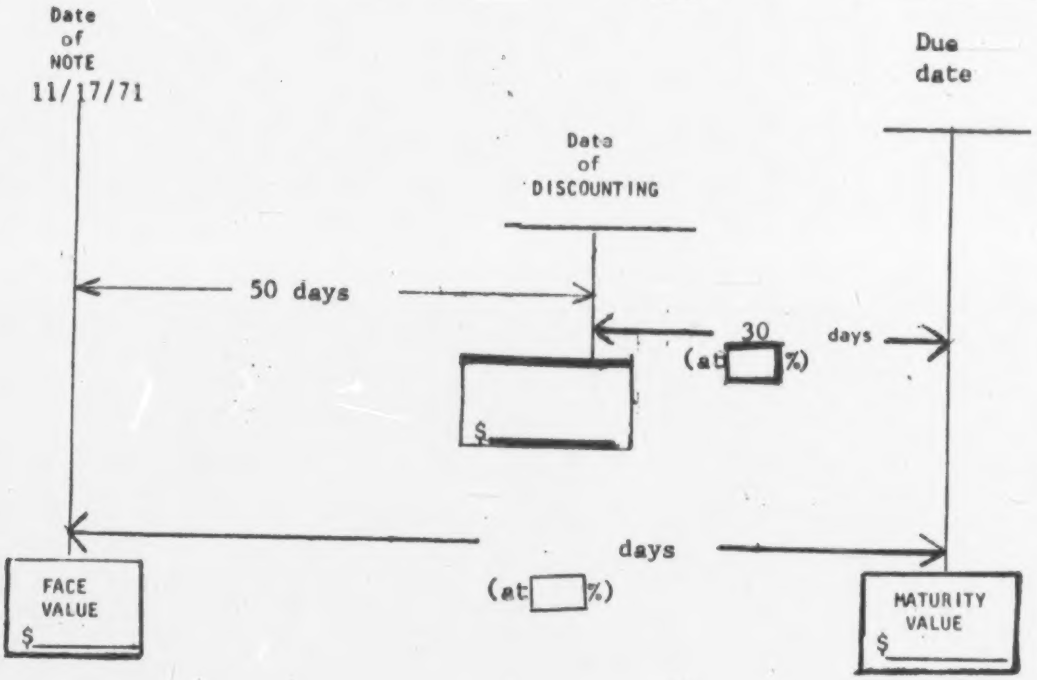
AFTER YOU TURN THIS PAGE,

TURN THE BOOK END-FOR-END.

Frame 25 begins on the blue (left-hand) page. To continue, after 25, work toward the front cover on the right-hand pages, only.

* *

25. 1. Using the facts given below the diagram, complete everything but the proceeds.


Date of NOTE
11/17/71
Due date
Date of DISCOUNTING
50 days
30 days
(at ☐ %)
$
days
(at ☐ %)
FACE VALUE
$
MATURITY VALUE
$

Facts: A $3000 note receivable bears interest at 9%. It was discounted at 6% with the Progess Nat. Bank.

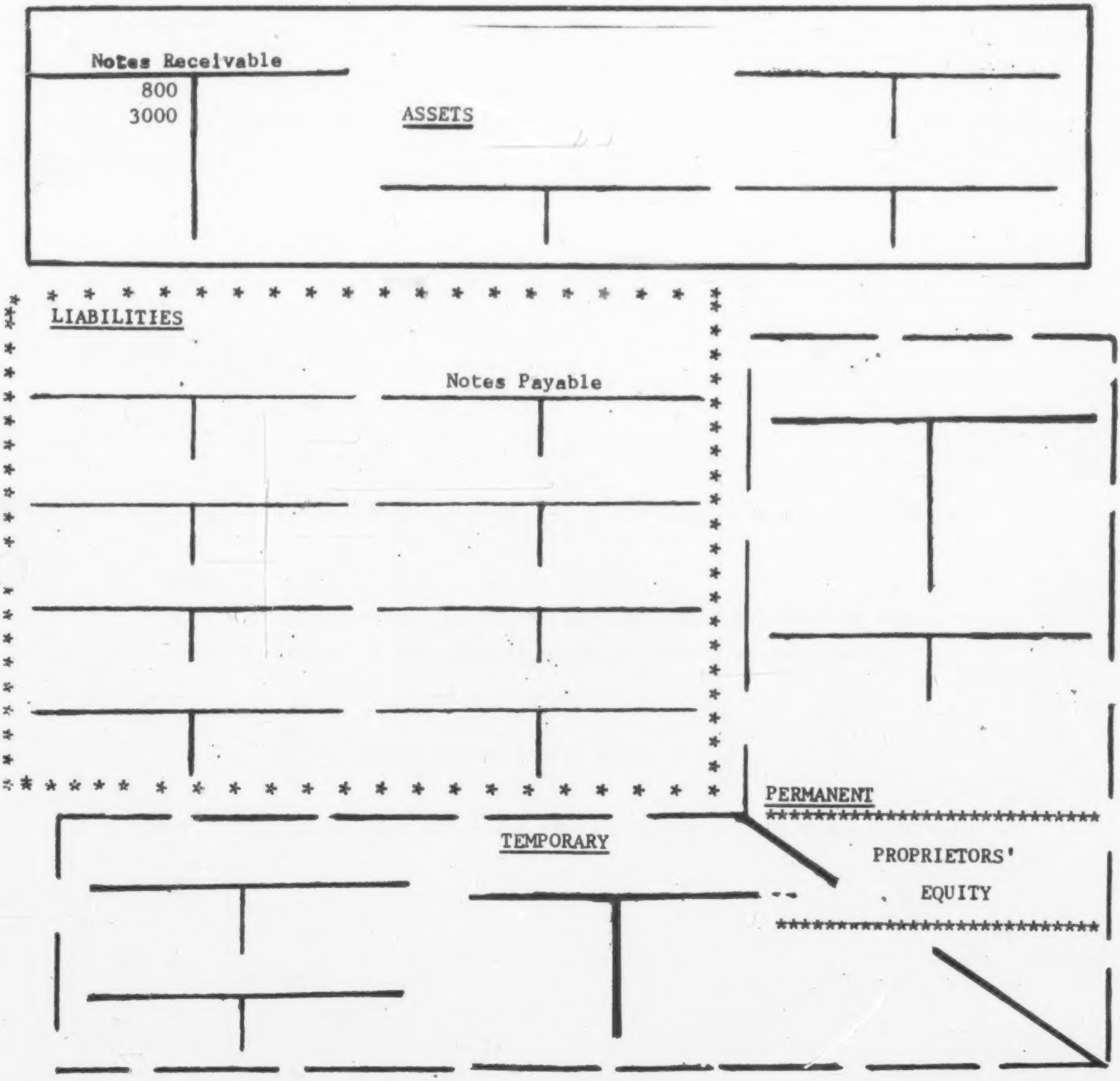
2. The discount amounted to $ 15.30 Write an expression for computing it.

( ) = $15.30

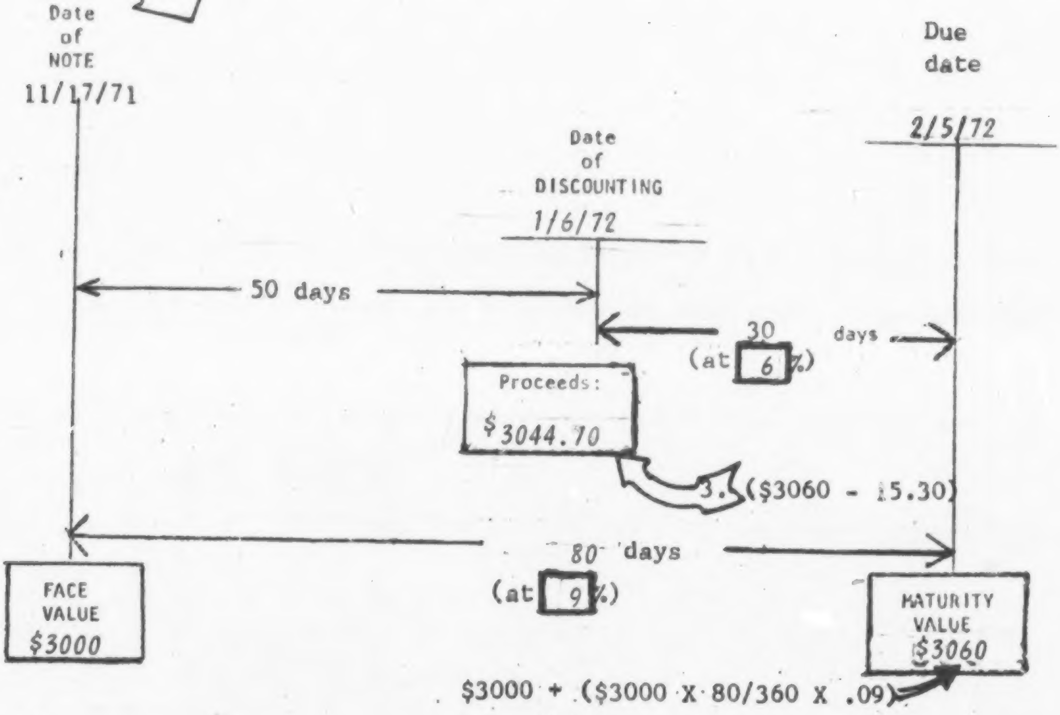
3. Complete the diagram.

4. The page opposite is a segregated ledger. (Page 8 of "The Accounting Model" illustrates use.)

Record the transaction in which the proceeds are received. When writing additional account titles make sure you choose the right section.

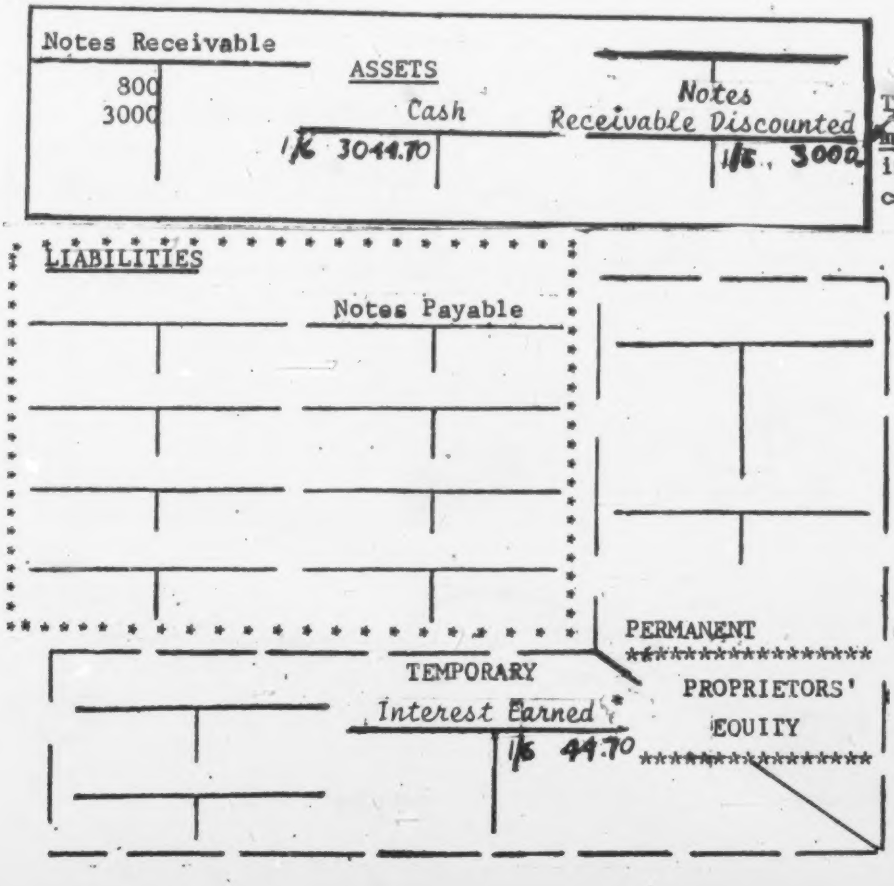

Notes Receivable
800
3000
ASSETS
LIABILITIES
Notes Payable
PERMANENT
TEMPORARY
PROPRIETORS'
EQUITY

ANS. 25. 1.


Date of NOTE
11/17/71
Date of DISCOUNTING
1/6/72
Due date
2/5/72
50 days
30 days
(at 6%)
Proceeds: $3044.70
3. ($3060 - 15.30)
80 days
(at 9%)
FACE VALUE $3000
MATURITY VALUE $3060
$3000 + ($3000 X 80/360 X .09)

2. ($3060 X 6/100 X 30/360)

4.


Notes Receivable
800
3000
ASSETS
Cash
1/6 3044.70
Notes Receivable Discounted
1/6 3000
LIABILITIES
Notes Payable
PERMANENT
PROPRIETORS' EQUITY
TEMPORARY
Interest Earned*
1/6 44.70

This credit may be made in Notes Receivable.

*(or Interest Income)

Reporting a contingent liability

26. If the firm makes a Balance Sheet from the ledger in the last frame, it's current asset section may include:

A.

Balance Sheet

Current Assets:		**Current Liabilities:**	
Notes Receivable#	$800		
		Non-current Liabilities:	
Total current	$$$$		
Non-current Assets:		**Ownership Equity:**	
TOTAL		TOTAL	

# The company is contingently liable on a $3000 note discounted with Progress National Bank.

If so, this footnote is required.

The footnote is *not* needed when the current assets section reports *both* the asset and contra-asset balances.

Which report of net Notes Receivable is the equivalent of A?

B.

(Current Assets section)

Notes Receivable	$ 800	
less: Notes Receivable Discounted	3000	
Net Notes Receivable		2200

C.

(Current Assets section)

Notes Receivable	$3800	
less Notes Receivable Discounted	3000	
Net Notes Receivable		800

ANS. 26

C ($800 should be added to total assets for notes on hand. In B, the $2200 is negative--which is impossible.)

---

27. The reason for the footnote in frame 26 is that endorsing the note which the bank bought adds our guarantee of payment to the promise of the maker. The term applied is "contingent liability" AND IT ISN'T A DEBT.

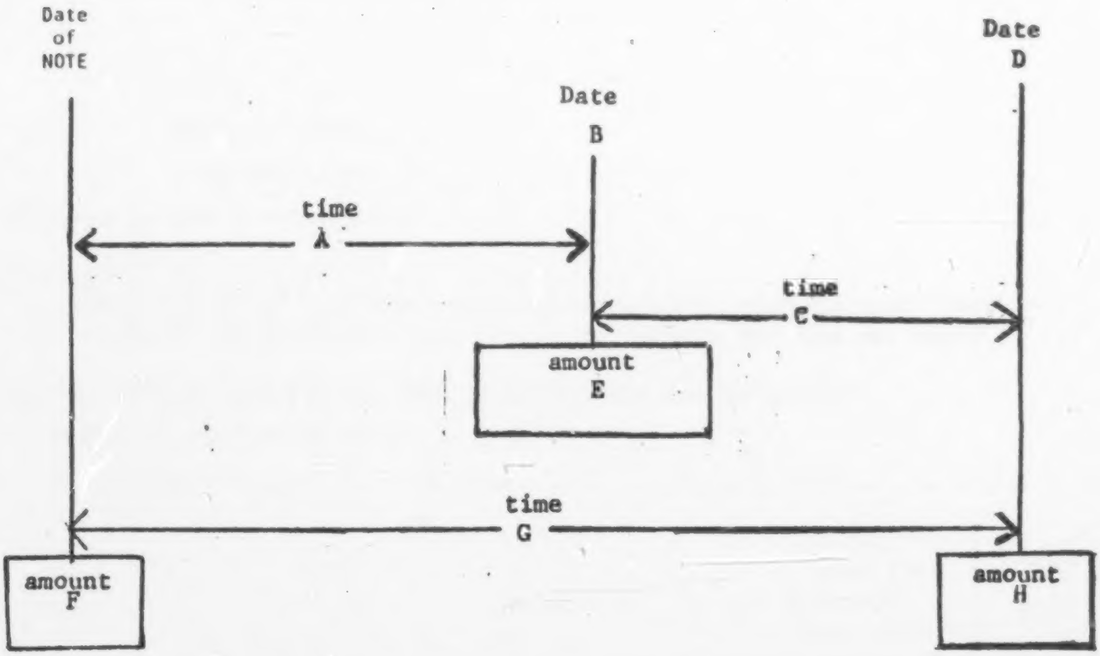
There is a possibility of having to pay. It depends on an uncertain event, or contingency, and the event is not considered probable.

Some other contingencies:
"If it rains, you have to wear your rubbers." (You might have to.)
"I won't be over this evening, unless I finish my term paper." (Don't hold your breath.)
"Come back! You forgot to say . . . " (The contingency on which your taking three giant steps depended did not occur.)

A. Can the bank collect from us instead of the maker, just because it wants to?

What contingency would require us to pay the customer's note?

B. In the diagram below, what letter identifies the period during which we need to report a "contingent liability"? ________



C. Fill the blanks with the appropriate letters:

__G__ time of the note ____ due date

____ proceeds from discounting ____ face value ____ date of discount

____ discount period ____ maturity value

PANEL D

Balance Sheet
June 30, 1970

A.

Assets			
Current Assets:			
Cash		$ 500.00	
Notes Receivable	$ 700.00		
Less Notes Receivable Discounted	450.00	250.00	
Merchandise Inventory		3000.00	
Accrued Interest		37.70	
Total Current Assets			$ 3787.70

Balance Sheet
June 30, 1970

B.

Assets			
Current Assets:			
Cash		$ 500.00	
Notes Receivable	$1150.00		
Less Notes Receivable Discounted	450.00	700.00	
Merchandise Inventory		3000.00	
Accrued Interest		37.70	
Total Current Assets			$4237.70

Balance Sheet
June 30, 1970

C.

Current Assets:			
Cash		$ 500 00	
Notes Receivable		700 00	
Merchandise Inventory		3000 00	
Accrued Interest		37 70	
Total Current Assets			$4237 70

ANS. 27 A. The bank can collect from the endorser only if:
(contingency) the maker doesn't pay at maturity.

B. C

C. G time of the note D due date

E proceeds from discounting F face value B date of discount

C discount period H maturity value

---

28. The partial Balance Sheets on Panel D are from the ledger in which these accounts appear.

The June 1 transaction was with the Farmers' Trust Co.

Notes Receivable	Discounted	
	6/1	450

Notes Receivable			
3/1	4000	4/1	2000
3/21	700	5/1	2000
4/1	450		

On Panel D (yellow):

Assuming that other current assets are correct,

a. Circle the letter of the correct Balance Sheet excerpt.
b. Supply the missing requirement in the incomplete one.
c. Cross out the one that's inaccurate.

ANS. 28. a. [✓ B]

b.

Balance Sheet
June 30, 1970

C.

Current Assets:		
Cash	$ 500 00	
Notes Receivable	700 00	
Merchandise Inventory '	3000 00	
Accrued Interest	37 70	
Total Current Assets		$4237 70

add similar footnote →

* *The company has a $450.00 contingent liability on a note discounted with the Farmers Trust Co.*

c.

A.

The NET value must be $700.

---

29. Of course the firm reports a contingent liability only until a discounted note receivable matures. As with other contra-assets, the reduction is eventually transferred to the asset account proper. You may recall that when a customer's account is identified as uncollectible the following write-off is recorded as an INTERNAL transaction.

Accounts Receivable				Allowance for Bad Debts			
BAL.	15,080	*4/4*	*90*	*4/4*	*90*	BAL.	510

write-off

The book value of Accounts Receivable is unchanged, but the location of the reduction for the specific customer is.

A. Look at the T-accounts in frame 28 again.
How many actual days is the discount period? *GREEN panel has the calendar.*
If you still need it, pay more attention to the summary on how to remember.

discount period = __________ days

B. Use the form at the top of the next page to analyze the transaction which will call for cancellation of the reminder of the contingent liability and of the debit by which receipt of the note was recorded.

FOR 29B

internal transaction

Step 2. Which assets change?

Step 3. MORE or LESS

$______ | $______

$______ | $______

$______ | $______

From ALL of Step 3:

Step 4. Which liabilities change?

Step 5. MORE or LESS

$______ | $______

$______ | $______

$______ | $______

From ALL of Step 5:

Step 6. { ZERO ___ (✓) $+ ______ OR $- ______ } change in A → MINUS → change in L { ZERO ___ (✓) $+ ______ OR $- ______ }

Step 7. If not zero, show account and amount. ZERO _____ (✓)

expense ______ $______

investment ______ $______

disinvestment ______ $______

income ______ $______

revenue ______ $______

• •

* * * * * * * * * * * * * * * * * * * *

Remove this page, and USE THE FORM BELOW for part A of frame 30.

* * * * * * * * * * * * * * * * * * * *

Take care with form and ruling.

ASSETS			
Current Assets:			
Cash			
Accounts Receivable			

ANS. 29. discount period = 62 days

. . . .

internal transaction

Step 2. Which assets change?

Step 3. MORE or LESS

Step 2. Which assets change?	Step 3. MORE	or LESS
Notes Receivable	$	$ 450
Notes Receivable Discounted	$	$
	$ 450	$

From ALL of Step 3:

Step 4. Which liabilities change?

Step 5. MORE or LESS

Step 4. Which liabilities change?	Step 5. MORE	or LESS
	$	$
	$	$
	$	$

From ALL of Step 5

Step 6. $+ ______ ZERO ✓ (✓) OR $− ______ } change in A → MINUS → change in L { $+ ______ ZERO ✓ (✓) OR $− ______

Step 7. If not zero, show account and amount. ZERO ✓ (✓)

______ $ ______ disinvestment

expense ______ $ ______ income ______ $ ______

investment ______ $ ______ revenue ______ $ ______

. . . .

---

30. Here is a correct partial balance sheet.

ASSETS

Current Assets:		
Cash	$ 1,050.00	
Accounts Receivable	847.20	
Notes Receivable *	70.00	
Merchandise Inventory	6,400.44	
Accrued Interest Receivable	1.00	
Total Current Assets		$ 8,366.64

* The company is contingently liable on a $400 note discounted with the First National Bank.

A. In the form on the prior page, you complete a current assets section for the same facts, but show the contingent liability by means of the contra-asset account balance.

B. Here is the Notes Receivable account to which the statements refer. The $400 note was discounted on November 14 and is a 90 day note.

Notes Receivable

7/11	250	9/9	250
10/20	70	DATE	400
10/25	400		

1. If the firm uses the account called Notes Receivable Discounted, the day that DATE stands for is ______ (month) / ______ (day).

2. If the contra-asset account is not used, DATE refers to ______ (month) / ______ (day).

3. On which date will this company debit Cash? ______

For what amount? (circle)

face value maturity value proceeds

ANS. 30 A.

ASSETS			
Current Assets:			
Cash		$ 1,050.00	
Accounts Receivable		847.20	
Notes Receivable	$ 470.00		
Less Notes Receivable Discounted	400.00	70.00	
Merchandise Inventory		6,400.44	
Accrued Interest Receivable		1.00	
Total Current Assets			$ 8,368.64

B. 1. January 23, maturity date (90
-67 = 6 + 30 +31 for Oct., Nov., Dec.
23 days in Jan.)

2. November 14 (date of discount)

3. Nov. 14 (for the) proceeds

- -

Start frame 31
on next page.

This form is for part D of frame 31.

Step 1. (Circle a,b, or c)
a. It is a CUSTOMER.
[✓ b. It is a SUPPLIER.]
c. It is dealing with its OWNER.

Step 2.
____
____
____

Step 3.
MORE or LESS
$______ | $______
$______ | $______
$______ | $______
ZERO ___ (✓)
$+ ______ OR
$- ______

Step 4.
____
____
____

Step 5.
MORE or LESS
$______ | $______
$______ | $______
$______ | $______
ZERO ___ (✓)
$+ ______ OR
$- ______

Step 6.

Step 7. If not zero, show account and amount. ZERO _____ (✓)

expense ______________________ $______
investment ______________________ $______
disinvestment ______________________ $______
income ______________________ $______
revenue ______________________ $______

When the maker dishonors the note:

31. Occasionally an endorser does have to pay the holder of a note. He pays what the maker promised, maturity value. He will usually have to pay an additional charge known as a "protest fee". While the endorser becomes fully indebted to the bank at the moment the maker "dishonors" his promise, he does not record a liability. He pays. In fact, the note is likely to be discounted at the bank where the firm's checking account is kept. If so, the first notice of the dishonor is often a "debit memo" in which the bank notifies the endorser that it has ALREADY deducted the face, the interest, and a protest fee from his bank account.

This journal entry was made to catch up after the bank reports that the maker has dishonored a $120 note which we had discounted with them.

May	2	Accounts Receivable		124 20	
		Cash			124 20
		Maturity value and protest fee on			
		the March 3, 6% note of Timothy			
		Leary which we discounted April 1.			

A. How much of the $124.20 was protest fee? ______________

* *

IF YOU WEREN'T ABLE TO ANSWER A, did you read the explanation of the May 2 journal entry carefully? Use all the information.

* *

B. If Notes Receivable Discounted was credited on April 1, its balance has served its purpose, no matter who pays the bank.

Journalize the entry to transfer the appropriate credit to Notes Receivable on May 2.

C. Note that the protest fee is to be collected from the maker of the note. Did his signature promise to pay that?

Is he being charged unfairly, or could he have avoided having a protest fee to pay?

D. A dishonored note is not normally the sign of an uncollectible account. If it is, that will be accounted for later, when it is decided that collection is hopeless. (Review the "Bad Debts" lesson if you have forgotten how this is handled.)

Is there any expense involved in our settlement with the bank (entry before A)?

Demonstrate why by analyzing. Use form on prior page.

ANS. 31. A. $3(exceeds maturity value,$121.20, by this amount) $120 + 1%

(6% for 60 days)

B. NOTE: face value, always

May	2	Notes Receivable Discounted		120 00	
		Notes Receivable			120 00
		Maturity of Discounted note			

C. The maker could avoid the protest fee by paying according to the terms he signed.

D.

Step 1. (Circle a,b or c) a. It is a CUSTOMER. [✓ b. It is a SUPPLIER.] c. It is dealing with its OWNER.

Step 2. Step 3. Step 4. Step 5.

Step 2.	Step 3. MORE	or LESS	Step 4.	Step 5. MORE	or LESS
Accounts Receivable	$124.20	$		$	$
	$	$		$	$
Cash	$	$124.20		$	$

Step 6. ZERO ✓ (✓) $+ OR $- ZERO ✓ (✓) $+ OR $-

NO EXPENSE because no decrease in proprietorship

Step 7. If not zero, show account and amount. ZERO ✓ (✓)

expense $

investment $

disinvestment $

income $

revenue $

32. The following series of transactions have been entered in the segregated ledger below. Enter the letter of each transaction in the parentheses ( ) which key its debits and credits.

a. Accepted a $300 note in exchange for merchandise.

b. Discounted the note received in a. The proceeds were $298.

c. Discounted our own ninety day note at 8%.

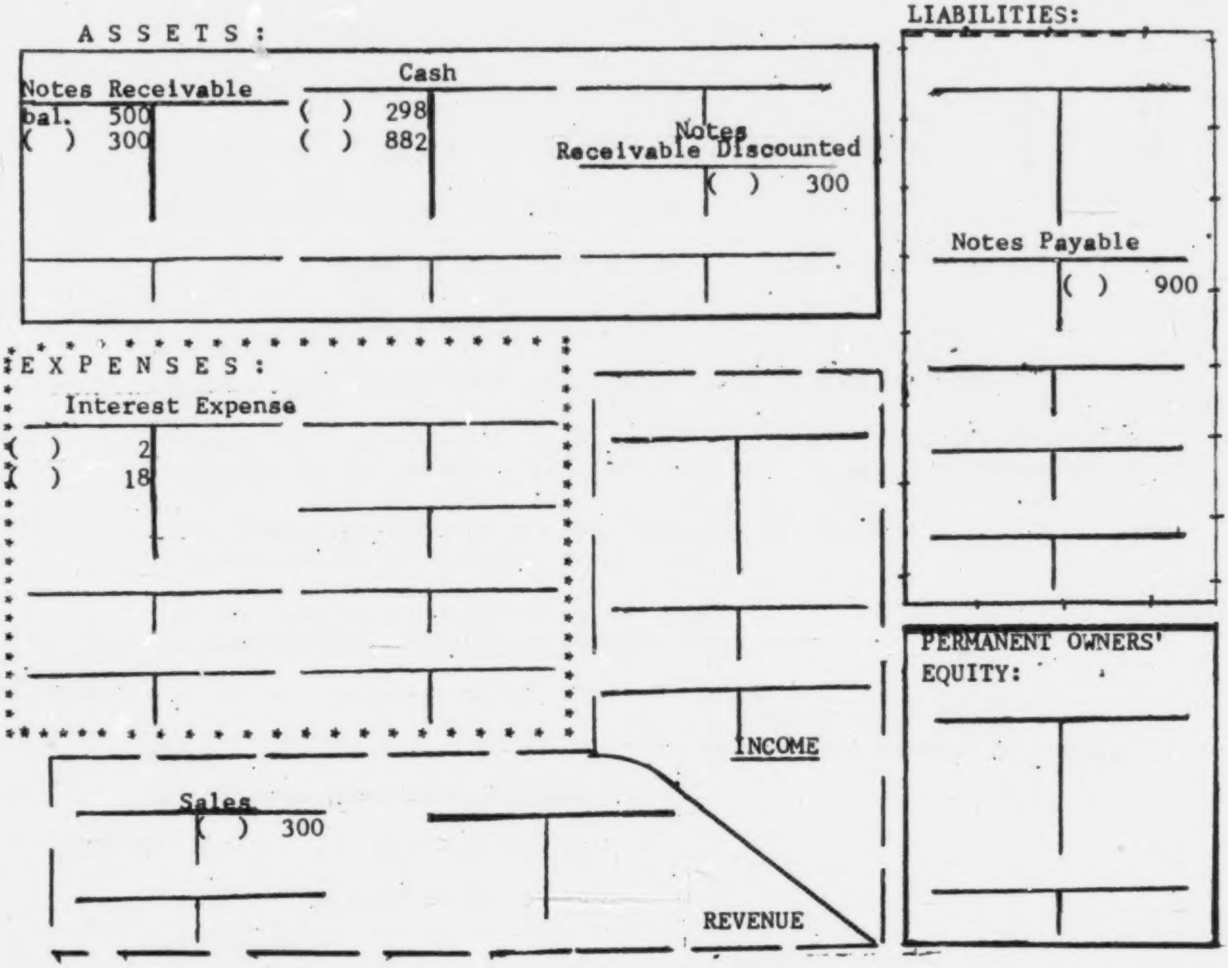
You enter the remaining transactions in the T-accounts. KEY your amounts with the letter indentifying the event.

These usually occur together.

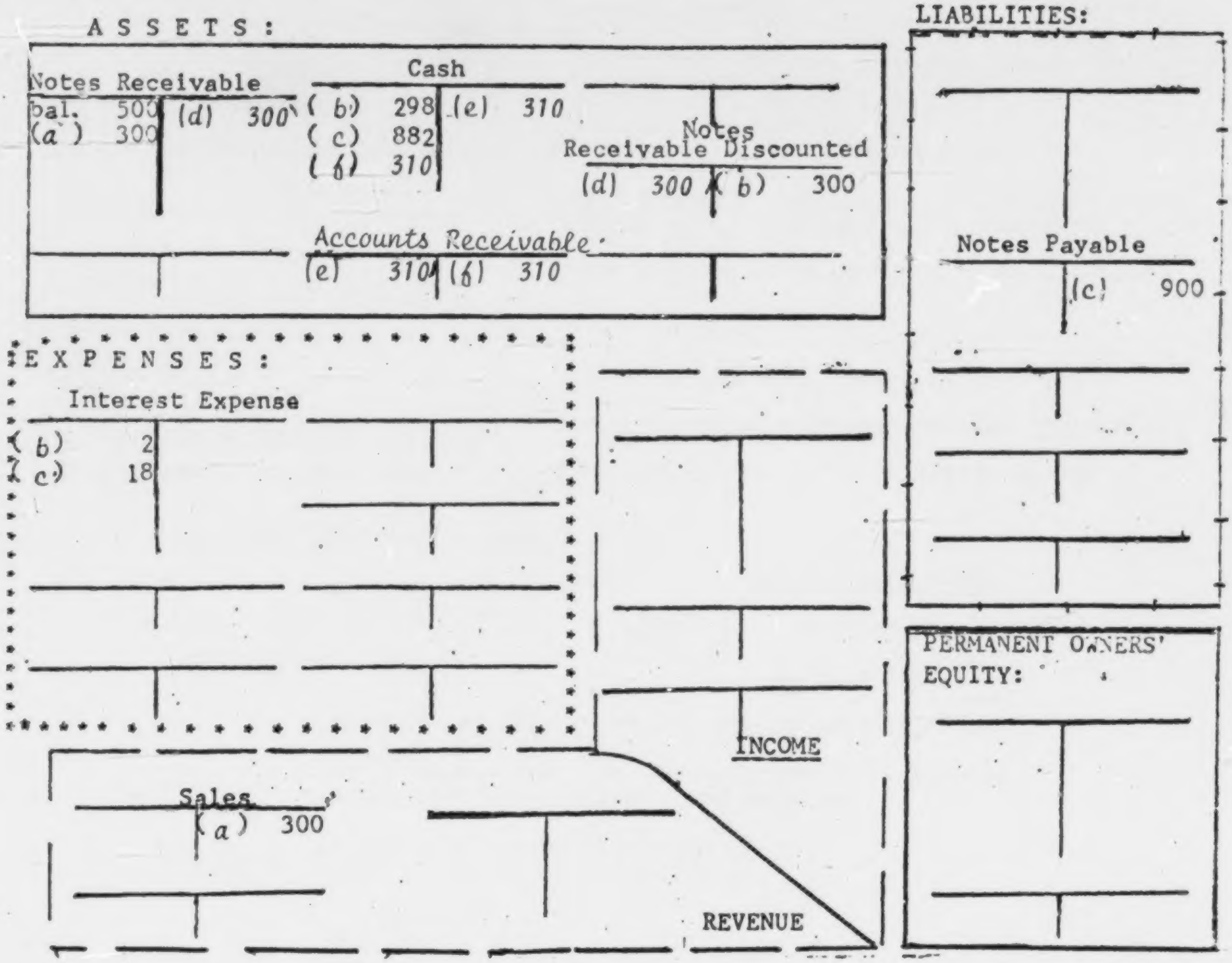
d. The customer's note matured.

e. We learn that the bank has charged us $310 because the customer had dishonored it. A $5 protest fee is covered by this charge.

f. The customer pays us in full.


ASSETS:
Notes Receivable
bal. 500
( ) 300
Cash
( ) 298
( ) 882
Notes Receivable Discounted
( ) 300
LIABILITIES:
Notes Payable
( ) 900
EXPENSES:
Interest Expense
( ) 2
( ) 18
INCOME
Sales
( ) 300
REVENUE
PERMANENT OWNERS' EQUITY:

ANS. 32.


ASSETS:
Notes Receivable
bal. 500
(a) 300
(d) 300
Cash
(b) 298
(c) 882
(f) 310
(e) 310
Notes Receivable Discounted
(d) 300
(b) 300
Accounts Receivable
(e) 310
(f) 310
LIABILITIES:
Notes Payable
(c) 900
EXPENSES:
Interest Expense
(b) 2
(c) 18
INCOME
Sales
(a) 300
REVENUE
PERMANENT OWNERS' EQUITY:

---

33. If our 90 day note (above answer) has been outstanding only 30 days at the end of the fiscal year, the 18 dollar discount should be expensed 1/3 in the current year and 2/3 in the next year (when it matures).

What must the adjustment do? (underline)

accrue 12 dollars	defer $12
accrue $6 of expense	defer $6.00 of expense

What will be the effect on the permanent* account in the adjustment?

more asset   more liability   less asset   less liability

---

* A "permanent" account is one reported on the balance sheet.

ANS. 33. defer $12 (to be expense of next period)

more asset (such as "deferred interest expense")

34.

1. These T-accounts contain only transactions incident to the sale and collection from one customer. (Account balances are omitted.)

PARTIAL LEDGER:

Notes Receivable			
(b)	800.00		

Notes Receivable Discounted			
		(c)	800.00

		(a)	800.00

Allowance for Bad Debts			
(e)	812.00	(f)	812.00

Interest Expense			
(c)	1.53		

Cash			
(c)	793.47	(d)	812.00
(g)	812.00		

(a)	800.00	(b)	800.00
(d)	812.00	(e)	812.00
(f)	812.00	(g)	812.00

The list which follows is not in order, but all keyed entries are associated with one of the transactions. Place the appropriate letter(s) in the blanks. (In the case of (a), you write the missing titles on the accounts.)

__a__ Sold merchandise on account for $800.

______ Wroteoff customer's account as uncollectible.

______ Discounted customer's note for less than face.

______ Paid maturity value of note when maker dishonored it.

______ Accepted customer's interest-bearing note when his account became due.

______ Collected the eventual settlement of the account previously thought to be uncollectible.

2. At the same time as one of the transactions shown, another was obviously omitted.

   Enter the missing dr. and cr. and key them with the same letter as the transaction to which it relates.

ANS. 34, 1.

PARTIAL LEDGER:

N "Merchandise"

②

Notes Receivable			
(b)	800.00	*(d)*	*800.–*

Notes Receivable Discounted			
(d)	*800.–*	(c)	800.00

Sales			
		(a)	800.00

SELLING PRICE

Allowance for Bad Debts			
(e)	812.00	(f)	812.00

Interest Expense			
(c)	1.53		

Cash			
(c)	793.47	(d)	812.00
(g)	812.00		

Accounts Receivable			
(a)	800.00	(b)	800.00
(d)	812.00	(e)	812.00
(f)	812.00	(g)	812.00

a

e

c

d

b

6.a

COMPARING THE COST OF BORROWING

35. The effective rate of interest:

In recent years laws about "truth in lending" have required credit granters to state the "true annual interest rate" of the terms they offer. An equivalent term is "effective interest rate".

Every person is a money manager. Presumably he wishes to act so that he gets "the most for his money"--whatever that means to him. For example, this may mean that he saves until he can afford to pay cash, rather than borrow money or pay "carrying charges" on a credit purchase. More often, however, he will use credit. In this case, to manage well he must compare the different opportunities available to him and choose the least expensive.

In frame 17 we noted that a simple interest rate of 8% was not equivalent to an 8% discount rate. In that example equal amounts were borrowed ($1184) for the same period (60 days), but the repayment was larger in the case of an "8% discount rate". There are three factors in the cost of borrowing. Two of them were identical in this example.

Circle the different factor which made the cost of borrowing unequal.

amount of money used   time of use   [✓ extra amount repaid (over amount used)]

Which factor makes the two costs different in this case?

$1000 dollars borrowed on a 3 month note dated July 30 will be repaid on October 30. At 6% the interest will be $15.

A six per cent, 90 day $1000 note will also require $15 interest.

The cost of borrowing (effective interest rate) is different because the 3 month note: (underline)

requires more repayment	allows longer use	allows use of a larger amount
requires less repayment	allows shorter use	allows use of a smaller amount

36. The effective rate of interest is the rate for a year. It's purpose is to allow a fair comparison of contracts for the use of money even though:

different amounts are borrowed,
different time periods are involved
the extra amounts repaid (over the amount a lender furnishes) are different, regardless of how terms are stated.

35. Extra amount repaid

allows longer use
1 day in July
31 days in August
30 days in Sept.
+30 days in October
92 days

The effective rate of "discounting at 8%" in frame 17 is a little over 8.106% annually.

(1.351% for 60 days) X 6

EFFECTIVE RATE OF INTEREST for the (green) Panel A example:

Bank earns this amount (discount)

$$\frac{\$8.12}{\$803.88} = 1.01\%$$

(fraction of actual amount lender gives)

Bank gives this amount (proceeds)

The 1.01 per cent (of the amount actually lent) is earned in the 40-day discount period.

How many times is it possible for the bank to do this (with the same $803.88) in an interest year of 360 days?

360 / 40 X 1.01% =an effective YEARLY rate of 9.09%

In other words, the bank earns as much as it would in each 1/9th of a one-year note bearing a 9.09% rate.

Show how to compute the rate for the 3-month, 6%, $1000 note of the last frame.

Rate for 92 (actual) days = (   )

Multiply rate by ________ .
(fraction)

36. ($15/$1000), or
($15 ÷ 1000)

360/92 (NOTE: interest year / actual days)

37. Note that the effective rate of interest summarizes answers to these three questions:

1. What did the borrower get to use?
2. What % of this principal (amount from 1) did he pay for its use?
3. If he'd used the money for a year, what would he have had to pay (in proportion to 2)?

In the last frame the answers were:

1. $1000
2. 15/1000 = decimal(X 100 for %) = 1.5%
3. 360/92 X .015 = .05874 (rounded)

What is the effective rate of interest in cases A and B?

Case A: The proceeds from discounting our own $700, 50 day note were $679.
(underline the expression)

679/700 X 50/360 365/50 X 42/679 21/700 X 50/365

360/50 X 21/679 42/679 X 360/50

Case B: In Panel C, (page 22) the proceeds are $271.63 on a note which has a $273 maturity value, 30 days later.

You write the expressions. interest rate for 30 days

(   )

X (   )

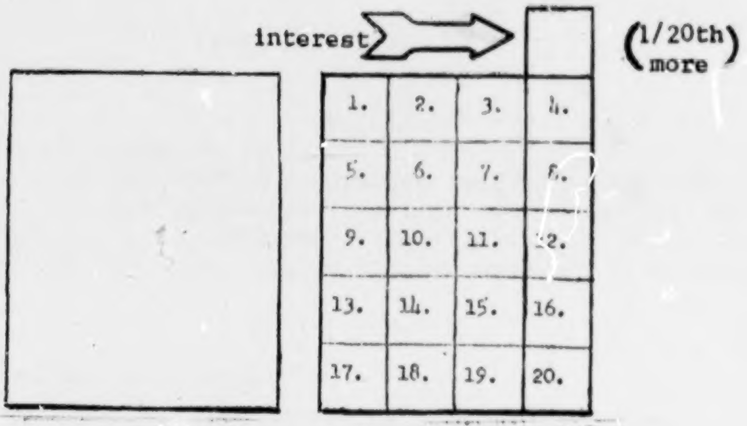
periods per year

IF YOU AREN'T SURE OF YOUR ANSWERS, go to the next frame,

BUT if you have the idea of effective rate of interest,

SKIP to the middle of page 43 to check your answers.

38.


interest
1/20th more
1. 2. 3. 4.
5. 6. 7. 8.
9. 10. 11. 12.
13. 14. 15. 16.
17. 18. 19. 20.

Amount BORROWED Amount REPAID

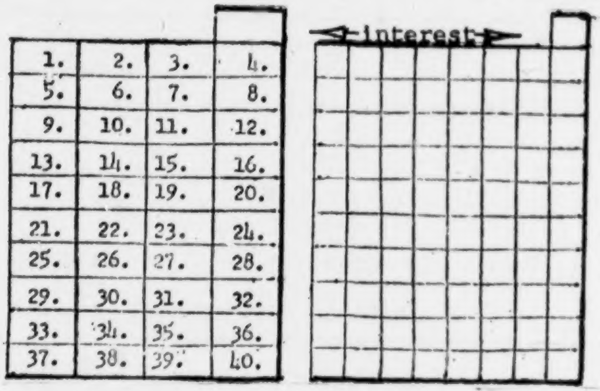
An interest rate is the proportion of the borrowed amount which is represented by the INTEREST AMOUNT FOR ONE YEAR.

The diagrams illustrate a year's interest at a rate of ______%.

38. $\frac{1}{20} = .05$

5%

39.


1. 2. 3. 4.
5. 6. 7. 8.
9. 10. 11. 12.
13. 14. 15. 16.
17. 18. 19. 20.
21. 22. 23. 24.
25. 26. 27. 28.
29. 30. 31. 32.
33. 34. 35. 36.
37. 38. 39. 40.
interest

Repayment A. Repayment B.

For the SAME AMOUNT BORROWED as in the last frame, the illustrations show the size of repayments required, at a 5% interest rate. What is the period?

1/40th for 6 months (for A) 1/2 year.

(for B) ______ year.

39. 1/4 year

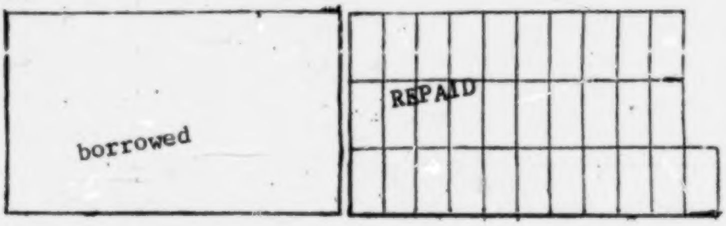
40. If the period is a year, repayment A in the last frame represents an effective interest cost of 1/40th, or ________%

What effective rate results from the same repayment after 150 days?

underline: 1/40 X 150/360 1/80 X 150/360

or, you write the expression (X)

41. Interest is an extra payment which accompanies a repayment.



Provided the principal is 30 times the interest, you can make up ANY amounts for the above diagrams to represent. Make some up.

If the diagrams refer to 120 days of use,

1. What did he get to use? $__________
2. What did he pay for using it? $__________
3. If 2 is % for 120 days how much is the rate for 360 days?

rate = __________%

▽

40. 2 1/2 %

(1/40 X ^{360}/150)

rate for 150 days

times per yr.

NOW REVIEW frame 37. Make the answers you now feel are correct.

CHECK THEM BELOW.

41. e.g. $30

$1

$1/$30 X 3 = 10%

(times per year)

⇨ ANSWERS to FRAME 37. (If you don't have them, do 38-41 before proceeding.)

Case A: 360/50 X 21/679

non-interest-bearing note, so cost to use proceeds is $21

periods per year

Case B: (1.37/ 271.63) rate for 30 days

X (360/30) times per year

▽

---

42. All costs should be considered in an effective rate computation. In frame 31 the maker of the 120 dollar note agreed to a 6% rate.

(p.34) ←

What was his effective rate with the $3 protest fee included? He kept the money ten days past the 60 days in the terms of the note.

Set up the calculation. You needn't work it out.

43. Another way to look at the protest fee is that it was the cost of keeping the maturity value for an extra 10 days.

What expression can be solved for the effective rate of this unauthorized borrowing?

42.
$4.20/$120 X 360/70

▽

---

44. Sometimes the terms of borrowing call for installments which cover both principal and interest.

If you can borrow $1000 at 6% for a year, what do you get to use?

$________

43. 3/121.60 X 360/10

If the proceeds of an installment loan is $1000, but you repay quarterly installments of $$265, the total dollar outlay will be equal.

Is the cost of borrowing equal?

Is the answer to, "What does he get to use?" always the amount of the proceeds?

▽

ANS. 44. $1000

The cost of borrowing is NOT equal. It's roughly double!

The answer to, "What does he get to use?" is:

$1000 for 3 months
750 for the next 3 months
500. . . . . . etc.

The remainder of the lesson is one longer problem in which you can use what you've learned. If you think you should review some topic, do so now.

When ready, TURN THE BOOK AGAIN. Find frame 45 (page 45) on the back of the blue page.

45. 1. On June 20, U.Thant received a 90-day, 8% note for $600, from a customer, on account.

Record the entry directly in the accounts which follow.

Accounts Receivable PAGE 1

1970								
June			✓	2000 00				

Accrued Interest Receivable PAGE 2

Cash PAGE 3

1970								
June			✓	9070 00				

Interest Expense PAGE 4

1970								
June	6		J7	50 00				

Interest Income PAGE 5

					1970				
					June	11		J8	12 00

Merchandise Inventory PAGE 6

1970								
June			✓	5000 00				

Notes Payable PAGE 7

					1970				
					June			✓	100 00

Notes Receivable 8

1970								
June			✓	90 00				
	8		J9	710 00				

Notes Receivable Discounted 9

Prepaid (or deferred) Interest Expense 10

Profit and Loss 11

2. On June 30, he discounted his own 60-day note for $500 at the bank's discount rate of 9%.
    (a) What proceeds should he receive? $______________
    (b) What is the note's maturity value? $______________

    Enter the transaction in affected accounts.

3. Adjust on June 30 for interest on the two notes mentioned. (Enter debits and credits directly in the accounts.)

4. July 1 is the start of a new fiscal year. Without making an entry, rule the accounts which would have been closed to show that each would have a zero balance. (Increase Merchandise Inventory to it's new balance of $5,707.50. Credit profit and loss.)

5. On July 20 the customer's note is discounted at the rate of 6%.
    (a) What is the maturity value of the note? $__________________
    (b) What is the amount of the discount? $________________
    (c) Compute the proceeds and give the entry, in general journal form, to record the transaction on July 20.

Journal page 12

1970					
July	20				

6. Post your journal entry.

7. Prepare a current assets section of a balance sheet (without adjusting further) from the present state of your accounts.

U Thant
Balance Sheet
July 20, 1970

8. Prepare transaction analyses of all entries to record: (Use opposite page.)
   a. Payment of our note on August 29.
   b. Dishonor of the customer note on its due date, September ________.
   (?)
   (Protest fee was $4.)

9. Enter the effects of your analyses directly in the accounts.

10. The customer contracted to pay an effective 8% to delay the settlement of his account when he signed the 90-day note. The protest fee adds to his cost, however. What effective rate does he pay for the full delay in settling his original $600 debt if he pays in full 10 days after dishonoring his note?

You need not compute the result. Set up a calculation.

Step 1. (Circle a,b or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2.

____

____

____

Step 3.

MORE	or LESS
$_____	$_____
$_____	$_____
$_____	$_____

{ ZERO ___ (✓) $+ _____ OR $- _____ }

Step 4.

____

____

____

Step 5.

MORE	or LESS
$_____	$_____
$_____	$_____
$_____	$_____

{ ZERO ___ (✓) $+ _____ OR $- _____ }

Step 6.

Step 7. If not zero, show account and amount. ZERO ____ (✓)

expense ____________________ $______

investment ____________________ $______

disinvestment ____________________ $______

income ____________________ $______

revenue ____________________ $______

Step 1. (Circle a,b, or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2.

____

____

____

Step 3.

MORE	or LESS
$_____	$_____
$_____	$_____
$_____	$_____

{ ZERO ___ (✓) $+ _____ OR $- _____ }

Step 4.

____

____

____

Step 5.

MORE	or LESS
$_____	$_____
$_____	$_____
$_____	$_____

{ ZERO ___ (✓) $+ _____ OR $- _____ }

Step 6.

Step 7. If not zero, show account and amount. ZERO ____ (✓)

expense ____________________ $______

investment ____________________ $______

disinvestment ____________________ $______

income ____________________ $______

revenue ____________________ $______

Step 1. (Circle a, b or c) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2.

____

____

____

Step 3.

MORE	or LESS
$_____	$_____
$_____	$_____
$_____	$_____

{ ZERO ___ (✓) $+ _____ OR $- _____ }

Step 4.

____

____

____

Step 5.

MORE	or LESS
$_____	$_____
$_____	$_____
$_____	$_____

{ ZERO ___ (✓) $+ _____ OR $- _____ }

Step 6.

7. If not zero, show account and amount. ZERO ____ (✓)

expense ____________________ $______

investment ____________________ $______

disinvestment ____________________ $______

income ____________________ $______

revenue ____________________ $______

ANS. 1, 3, 4, 6, & 9.

Accounts Receivable PAGE 1

1970					1970				
June			✓	200000	June	20			60000
Sept	18	(8b)		61600					

Accrued Interest Receivable PAGE 2

1970									
June	30			133					

Cash PAGE 3

1970					1970				
June			✓	907000	Aug	29	(8a)		50000
	30	(for 2)		49250	Sept	18	(8b)		61600
July	20		J12	60588					

Interest Expense PAGE 4

1970									
June	6		J7	5000	June	30	(for 3)		750
	30	(for 2)		750					
Aug	29	(for 8a)		750					

Not required—but O.K.

Interest Income PAGE 5

					1970				
					June	11		J8	1200
						30	(for 3)		133
					July	20		J12	588

Merchandise Inventory PAGE 6

1970									
June			✓	500000					
	30			70750					

Notes Payable PAGE 7

1970					1970				
Aug	29	(8a)		50000	June			✓	10000
						30	(for 2)		50000

Notes Receivable 8

1970									
June			✓	9000					
	8		J9	71000					
	20			60000					

Notes Receivable Discounted 9

					1970				
					July	20		J12	60000

Prepaid (or deferred) Interest Expense 10

1970					1970				
June	[illegible]	(for 3)		750	Aug	29	(8a)		750 *

Profit and Loss 11

					1970				
					June	30			70750

2. (a) **What proceeds should he receive?** $ 492.50 ($500 - 7.50)

(b) **What is the note's maturity value?** $ 500 (Non-interest bearing, since interest was subtracted to get the proceeds

5. (a) What is the maturity value of the note? $ 612.00

(b) What is the amount of the discount? $ 6.12 $612 \times \frac{60}{360} \times \frac{6}{100}$

Journal page 12

1970					
July	20	Cash	3	605 88	
		Notes Receivable Discounted	9		600 00
		Interest Income	5		5 88
		Discounted customer note @ 6%. Discount period is 60 days.			
		$612.00			
		- 6.12			
		$605.88			

7.

U Thant
Balance Sheet
July 20, 1970

Assets			
Current Assets:			
Cash		10168 38	
Accounts Receivable		1400 00	
Notes Receivable	1400 00		
Less Notes Receivable Discounted	600 00	800 00	
Merchandise Inventory		5707 50	
Accrued Interest Receivable		1 33	
Prepaid Interest Expense		7 50	
Total Current Assets			18084 71

May have separate line, BUT $800 amt. is the only correct amount to add to other current bals.

8a.

Step 1. (Circle a,b or c) [✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its OWNER.

Step 2. Cash

Step 3. MORE or LESS
$ ______ | $ 500
$ ______ | $ ______
$ ______ | $ ______

Step 6. { ZERO ___ (✓) $+ ______ OR $- 500 }

Step 4. Notes Payable

Step 5. MORE or LESS
$ ______ | $ 500
$ ______ | $ ______
$ ______ | $ ______

{ ZERO ___ (✓) $+ ______ OR $- 500 }

Step 7. If not zero, show account and amount. ZERO ✓ (✓)

______ $ ______
expense ______ $ ______
investment

______ $ ______
disinvestment ______ $ ______
income ______ $ ______
revenue

b. *September 18*

9/18

Step 1. (Circle a,b, or c)   a. It is a CUSTOMER.   [✓ b. It is a SUPPLIER.]   c. It is dealing with its OWNER.

Step 2.	Step 3. MORE	or LESS
Accounts Receivable	$616.00 **	$
Cash	$	$616.00
	$	$

ZERO ✓ (✓)
$+ OR
$-

Step 4.

**maturity value $612
+ protest fee 4
all charged to maker of note.

Step 5. MORE	or LESS
$	$
$	$
$	$

ZERO ✓ (✓)
$+ OR
$-

Step 6.

Step 7. If not zero, show account and amount.   ZERO ✓ (✓)

expense $
investment $
disinvestment $
income $
revenue $

Step 1. (Circle a, b or c)   a. It is a CUSTOMER.   b. It is a SUPPLIER.   c. It is dealing with its OWNER.

(internal transaction)

Step 2.	Step 3. MORE	or LESS
Notes Receivable	$	$600
Notes Rec. Discounted	$	$
	$ 600	$

ZERO ✓ (✓)
$+ OR
$-

Step 4.

Step 5. MORE	or LESS
$	$
$	$
$	$

ZERO ✓ (✓)
$+ OR
$-

Step 6.

7. If not zero, show account and amount.   ZERO ✓ (✓)

expense $
investment $
disinvestment $
income $
revenue $

10.

Money cost: $616 − 600

Amount used:

$\frac{16}{600}$ for 100 days* $\times \frac{360}{100}$ = annual rate

not required → (.096)

* 90 day note plus 10 days after maturity.

IMPREST FUNDS - A PETTY CASH EXAMPLE

The following pages are self-instruction in an accounting topic which often proves needlessly troublesome. It is intended for use by anyone who is familiar with the accounting cycle for service and merchandising firms. Because of this, you may be most familiar with a term for which we use a synonym. We have tried to mention these synonyms where they are first needed, and to connect our terms to an example. Pay careful attention to the context when you encounter a new term.

For future reference, the following topics may be found as indicated.

Imprest Funds (an overview)....................................p. 1
The Petty Cash Fund..p. 5
A summary on merchandise accounts (review)....................p. 12
Failure to reimburse the fund..................................p. 25
Cash over and short..p. 26
A summary problem..p. 36

Unless you received them with another lesson, two supplements follow. Put the blue one aside until you are instructed to refer to it.

The other supplement (green pages, yellow cover page) is entitled, "The Accounting Model." Two ways to use it are described on its cover.

IF you find it easy to start on the first supplement page and go through all the green pages - easy because you recognize familiar things in new settings and formats — then probably it is time well-spent to do that before page 1 of this lesson. However, you should not feel that you must "learn" the supplement first. It it isn't moderately easy to follow (even though unfamiliar) use parts, when needed, as suggested by 2. Only a few of the forms are used in this lesson.

AFTER YOU LOOK AT THE SUPPLEMENT, read page iii.

FOLLOW THESE DIRECTIONS CAREFULLY.

You will be given information, asked questions, or asked to follow instructions. The instructions appear as needed.

In most, but not all cases, you will be given "feedback" on your responses. Look for these answers; and, if you didn't agree, re-examine the frame. If you still don't understand, make a note to ask your instructor.

When more than one frame appears on a page, a cover sheet should be used to hide the answers until you've made yours. The next page is a "gripe sheet." If you fold the gripe sheet horizontally it will serve the purpose. Remove the gripe sheet and fold it.

As you are working, please keep track of your difficulties. That's its main function.

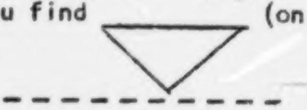
1. Make an X on the "gripe sheet" (next page) in the space for any part of a frame you missed.

2. Tell us why you had trouble. ("Unclear" doesn't help much. "I didn't know what 'permanent proprietorship' was," is great.) If you can, suggest an improvement. Attach these or write beside the frame.

3. Make any comment at all, whether you eventually answered correctly, or not. Identify parts you have commented on (right or wrong) with a "C" on the gripe sheet.

4. Note that we want to know how many minutes you spend completing the lesson (90 to 150 is normal). Remember to keep track.

What time is it? Make a note.

Now, cover page 1 below the first frame - the top should go where you find  (on the right).

After you write your answer in the frame, uncover to the dashed line after frame 2. Check your frame 1 answer.

Continue with the other frames.

TOTAL time to complete (minutes)________ NAME________________________

RESPONSES (Place an X beside the specific part of a missed response.)

1. ______

2. merely reclassified its assets

paid a bill

prepaid an expense

3. impressed / imprest

______

4. ____(✓) ____(✓)

5. ____(✓) ____(✓)

6. ____(✓) ____(✓) ____(✓)

7. (a)__________ a __________

(b) im

8. $__________

9. (1) __________ __________

(2) ledger journal

(3)

10. Oct. 12 ______ ______ ______

Oct. 15 ______ ______ ______

Oct. 18 ______ ______ ______

Oct. 18 ______ ______ ______

Oct. 13 ______ ______ ______

FOLD

11. skipped studied

12. skipped studied

(Check if you wrote in c.)

13. A.1 a b c.____(✓) B.1 a b c____(✓)

A.2 a b c.____(✓) B.2 a b c.____(✓)

A.3 a b c.____(✓) B.3 a b c____(✓)

A.4 a b c.____(✓) B.4 a b c____(✓)

C.1 a b c.____(✓) C.3 a b c____(✓)

C.2 a b c.____(✓) C.4 a b c____(✓)

14.1 a b c____(✓) .2 a b c____(✓) .3 a b c____(✓)

4 a b c____(✓) 5 a b c____(✓) 6 a b c____(✓)

15. A. $______

B. 1 2 equally to both

C. 3 4

16. I. ______ (Wherever forms must be filled in write in frame. X here if wrong.)

II. $______

III. [✓ A] B C

C ______

RESPONSES

17. I. $_____ $_____

II. $_____ and

III. A B C

_____ _____

18. (1) $_____

(2) A B C D

_____ _____ _____

(3) A B C

19. (1)...over by $_____.short by $_____

(2) A B C D E____

____ and ____

____

____

20. _____

21. A B

22. $_____

debited credited

23. (a) ____(✓) ____(✓) ____(✓)

(b) to restore the imprest amount /

to cover payments made

24. _____

25. _____

26. _____

27. (1) $_____

(2) A B

(3) _____

28. A. _____

B. _____

29. Circle any part that you missed.

1. 2. 3. 4. 5. 6.

7. a b c 8. 9. _____

Imprest Funds

1. When the Ohio Company, a wholesaler, decided to open a Toledo branch, it hired a manager and sent him a check for $3,000. To record the event, a debit was made to; "Imprest Fund - Toledo Br." and the usual credit for writing a check, which

   is to ______________________.
   (account title)

---

2. Since the branch is part of the Ohio Company (rather than a separate firm) establishing the fund is an

   1. Cash
   (or equivalent)

   external transaction

   [✓ internal transaction]

   (circle
   or underline)

   So far, the Ohio Company has

   merely reclassified its assets

   paid a bill

   prepaid an expense

---

3. At the end of the month the manager of the branch had

   2. merely reclassified
   its assets

   1. a receipt for 6 month's rent, $1200.

   2. a payroll record for the one employee who had been assisting him.

Wages	$150.00
Less: taxes withheld	14.50
Paid	$135.50

(His own salary was mailed from the home office.)

These documents and $1664.50 (probably on deposit in Toledo) are part of (impressed/imprest) fund. (Underline your choice.)

The manager can get more money, whenever he needs it, by sending the documents which show what it has been used for. In this case he sent the vouchers because of the month-end.

He received in exchange, a $1335.50 check from Ohio Co.'s home office.

Adding the new check to the unspent money should give the Toledo manager the amount he started with (frame 1). Did it do so?
(Complete the correct one.)

Yes, he once again has $__________
No,
he should have $__________ more.
he should have $__________ less.

FIND ANSWER TO 3 AT THE TOP OF NEXT PAGE

4. All of the accounting is done in the home office.

3. imprest (not impressed)
Yes, he once again has $3,000.
(the "imprest" amount)

---

1. The documents and the "reimbursement" check are the basis for one of these journal entries. Check (√) the one you think it should be.

____(√) A.

31	Prepaid Rent		1200 00	
	~~Wages~~		150 00	
	Cash			1335 50
	Employee Taxes Payable			14 50
	Toledo branch expenditures.			

____(√) B.

31	Prepaid Rent		1200 00	
	Wages		150 00	
	Imprest Fund-Toledo Br.			1335 50
	Employee Taxes Payable			14 50
	Toledo branch expenditures.			

2. Label the result of posting A and of posting B to the account for the imprest fund with the appropriate letter.

Imprest Fund-Toledo Br.	
10/20 3000	

Posting __________.

Posting __________.

Imprest Fund - Toledo Branch	
10/20 3000	10/31 1335.50

The Toledo manager has exactly $3000. There will be no other accounting for the events he reported for October. Many people expect that another entry (to record a credit for the check) will be made. Did you check the journal entry which shows the firm's money accurately for 10/31?

3. If you checked the wrong journal entry, go back and change your answer.

Make a big X thru the wrong one if you chose it first.

5. The remainder of this lesson uses a "petty cash fund" as an example of an imprest fund. The characteristics of the accounting peculiar to an imprest fund are the same whether the imprest amount is large or small. (Funds much larger than the Toledo Branch example are used.) The importance of the principles should not be judged by the amounts typical of petty cash.

The two noteworthy characteristics of accounting for an imprest fund have already been demonstrated in the Ohio Company example.

1. THE ASSET ACCOUNT FOR AN IMPREST FUND NORMALLY DOES NOT APPEAR (as either a debit or a credit) WHEN PAYMENTS FROM THE FUND ARE JOURNALIZED.
2. SEVERAL ACTUAL EVENTS ARE JOURNALIZED AND POSTED AS THOUGH THEY WERE ONE PAYMENT.

Number 1, above, is the reason B should NOT be checked in 1 of frame 4. Make sure you checked A.

(The answer to 4.2 is: Posting A.
Posting B.)

Here is the account for a petty cash fund which was established five years ago.

Petty Cash	
May 1 100	

(The only debit ever made to it.)

The fund has been reimbursed at least once a month since that time (i.e., a check was written to cover the amount spent since the last reimbursement.)

Check the true statement.

_____ (✓) The firm is way behind in its accounting.

_____ (✓) If the firm established a $100 imprest amount and has kept the size of the fund unchanged, the account is correct.

4.

5. ✓If the firm established a $100 impress amount and has kept the size of the fund unchanged the account is correct.

---

6. Examine these two journals in which identical amounts of payments have been recorded.

Company A

1970					
Dec.	1	Freight-In		10 50	
		Cash			10 50
		Cost of goods received.			
	4	Miscellaneous Expense		1 50	
		Cash			1 50
		Paperboy			
	10	Delivery Expense		7 00	
		Cash			7 00
		(Appropriate explanation)			

Company B

	12	Freight-In		10 50	
		Miscellaneous Expense		1 50	
		Delivery Expense		7 00	
		Cash			19 00
		(Appropriate explanation)			

Circle the letter of one or more correct statements.

x. Neither company paid these amounts from a petty cash fund because Petty Cash has not been credited.

y. Company A may have paid these amounts from a Petty Cash fund.

z. Company B may have paid these amounts from a petty cash fund because imprest funds are replenished with one check,

---

IF you circled x, return to frame 5. Petty Cash is an asset account for an imprest fund. Read the characteristics of imprest funds again, and choose a better answer.

IF you circled y, go to frame 6a, below.

IF you circled z, you are correct. ONE CASH CREDIT IS MADE FOR EACH CHECK. Since the debits are unlikely to occur in one event, petty cash is probably being replaced. Continue on the next page, now.

6a. NOTE carefully that y should NOT be circled. The second chracteristic mentioned in frame 5 tells you that one check will be written to bring any imprest fund back to its full amount. You were right in observing that Company A's three entries affect the ledger in the same way as Company B's one, BUT the control to which imprest funds contribute calls for recording each check written as one cash credit. Note, too, that Co. A paid these amounts on different dates. An imprest fund is not reimbursed after each payment from it. x, only, is right.

The Petty Cash Fund

7. The purpose of establishing a petty cash fund is control. When money is handled by employees it is necessary to guard against theft--and unfair suspicion of innocent parties--by establishing responsibility clearly and making strict rules about both the handling of money and the recording of cash transactions. Why would a thief like to alter the records of cash receipts and payments?

Opportunities for theft can be reduced by making all payments by check. However, this is usually not literally carried out. Instead, a limited amount of currency and change is placed in an imprest fund.

Such a "petty cash fund" is CREATED by drawing a check to a person who serves as "petty cashier"--usually an incidental responsibility--having him cash it, and providing him with a place for safekeeping.

Although the firm has no less money, Cash is reduced and "Petty Cash" or "Petty Cash fund" is debited. After that, the Balance Sheet includes two balances representing money* among its current assets. Find them in the illustration.

MARTINS' MART
Balance Sheet
December 31, 1970

Assets			
Current Assets:			
* Cash		$550	
* Petty Cash		50	
Accounts Receivable	$615		
Less: Allowance for Bad Debts	15		
Accounts receivable (net)		600	
Merchandise		350	$1550
Non-current Assets:			
Store Fixtures		$170	
Less: Accumulated Depreciation		45	125
Total Assets			$1675
Liabilities and Net Worth			
Current liabilities:			
Accounts payable		$ 700	
Advances from Customers		100	
Total liabilities			$ 800
Net Worth:			
Stockholders' equity			875
Total liabilities and net worth			$1675

a. On the date of this statement, Martins' Mart could pay $600 without borrowing money.

However, it can pay only $50 without ____________ *ing* a ____________.

b. The petty cash fund has an *im*______ amount of $50.

---

8. The petty cashier of Martins' Mart will not have $50 on hand at all times, of course. As payments are made, he will place receipts, paid bills, or merely a written memorandum of the amount and purpose of each outlay with the remaining money.

7. a. *writing a check*

b. *imprest*

He may or may not organize the information about his expenditures in a "PETTY CASH BOOK". Whether or not he does, the transactions he completes are not accounted for until he is given a new check in exchange for the vouchers he has accumulated. If the memoranda explain the purpose of payments totaling $35, how much money must he show, on demand, to escape criticism? $____________.

9. In preparation for replacing the money he had spent by turning in his receipts and other vouchers, the petty cashier listed the payments he had made in this form:

8. $15 (remainder of $50 imprest amount)

It is neither a journal nor a ledger.

TITLES of more frequently used accounts

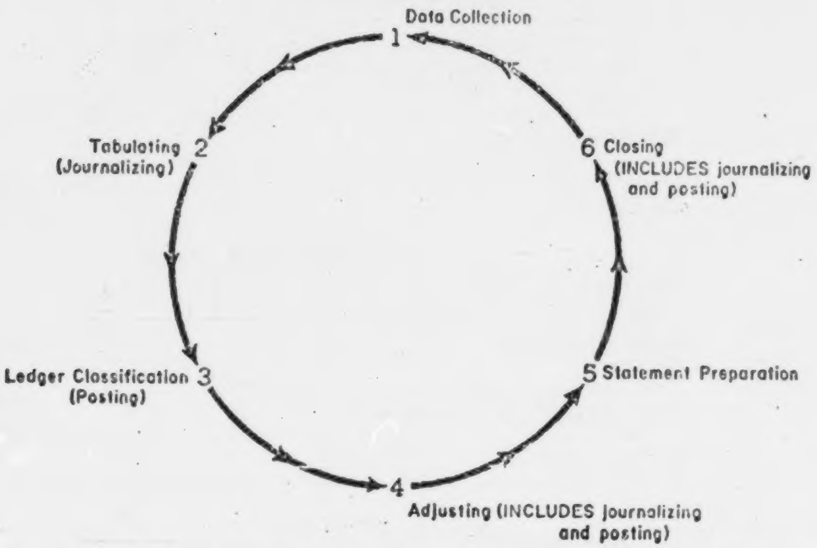
ANY OTHER titles and amounts

PETTY CASH ANALYSIS SHEET

Receipts		Date	Explanation	Total Disburse-ments	Distribution of payments				
Date	Amount				Supplies on hand	Sell'g Expenses	Misc. Expenses	Sundries Amount	Sundries Account
1970 Oct. 1	50.00	1970 Oct. 1	Fund balance						
		12	Vchr. No. 1	4.50				4.50	Contributions
		13	Vchr. No. 2	12.00			12.00		
		15	Vchr. No. 3	3.00				3.00	Advances to Empl.
		18	Vchr. No. 4	9.00		9.00			
		18	Vchr. No. 5	2.00				2.00	Frt. on Purchases
		20	Vchr. No. 6	4.50			4.50		
	50.00		Total	35.00		9.00	16.50	9.50	
			balance	15.00					
	50.00			50.00					

If prepared (It need not be.) it makes journalizing more convenient. Here are the steps of the accounting cycle:

THE ACCOUNTING CYCLE


1 Data Collection
2 Tabulating (Journalizing)
3 Ledger Classification (Posting)
4 Adjusting (INCLUDES journalizing and posting)
5 Statement Preparation
6 Closing (INCLUDES journalizing and posting)

1. A Petty Cash record may seem to be a "record of original entry". However, it is not. Whether familiar with the phrases or not, the information that one "posts" from the record of original entry to the record of final entry, means that a "record of original entry"

is a (circle) ledger journal

2. Curiously, then, a petty cash record is prepared, if at all,

__________ the record of original entry is prepared.
(when?)

3. Any kind of petty cash record is merely a memorandum record.
To which activity in the accounting cycle does it belong?

____________________ ____________________

9. 1. journal
2. before
3. data collection

10. This is the journal entry which established the MARTINS' MART petty cash fund.

1970				
Oct.	9	Petty Cash	50 00	
		Cash		50 00
		To establish fund.		

1. Prior to October 21, the petty cashier paid six different payments. One of the following is a correct journal entry for reimbursing the fund.

Mark a big X through the other wrong one.

A.

~~21~~	~~Petty Cash~~	~~35 00~~	
	~~Cash~~		~~35 00~~
	~~To replenish fund.~~		

B.

21	Selling Expense	9 00	
	Miscellaneous Expense	16 50	
	Freight on Purchases	2 00	
	Contributions	4 50	
	Advances to Employees	3 00	
	Cash		35 00
	To replenish petty cash.		

C.

21	Selling Expense	9 00	
	Miscellaneous Expense	16 50	
	Freight on Purchases	2 00	
	Contributions	4 50	
	Advances to Employees	3 00	
	Petty Cash		35 00
	To replenish petty cash.		

2. Before the reimbursement, only the money was really an asset (and assets were overstated because the imprest amount remained as the balance of Petty Cash in the ledger); the vouchers represented unrecorded debits of completed transactions.

The transactions were the following. Underline the correct October 21 debit for each one.

Oct. 12 Made a $4.50 donation to the Little League.

dr. an asset, Contributions/ dr. an expense, Contributions/ dr. an exp., Misc. Exp.

Oct. 15 Advanced the secretary $3.00 until next pay day.

dr. an asset, Advances to Employees/ dr. an exp., Adv. to Employees/ dr. Selling Exp.

Oct. 18 Took customer to lunch, $9.00.

dr. an exp., Entertainment/ dr. an expense, Misc. Exp./ dr an exp., Selling Exp.

Oct. 18 Paid the parcel post on a merchandise purchase.

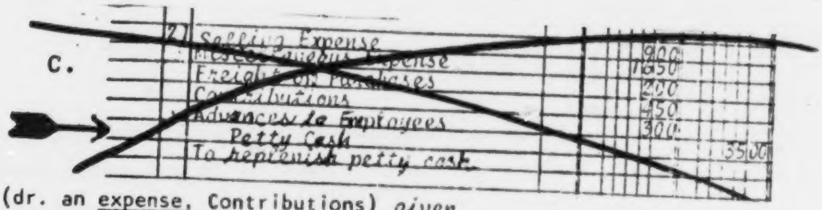
dr. an asset, Frt. on Purchases/ dr. an expense, Frt. on Purchases/ dr. Postage Exp.

Oct. 13 and 20 Window washing, $12 and messenger service, $4.50.

dr. an asset, Building/ debit an expense, Misc. Exp./ dr. a liability, Misc. Exp.

ANS. 10 1. C.

Credit Cash when you write a check.



21
Selling Expense
Miscellaneous Expense
Freight on Purchases
Contributions
Advances to Employees
Petty Cash
To replenish petty cash
900
1650
200
450
300
3500

2. Oct. 12 (dr. an expense, Contributions) *given*
   15 dr. an asset, Advances to Employees
   18 dr. an exp., Selling Expense

Note particularly that "Advances to Employees" is an asset. (It's either a receivable or prepaid salaries.)

(See below for the last two answers.)

- -

11. Which did you have in 10?

If you had:

Oct. 18 dr. an asset, Frt. on Purchases
Oct. 13,20 dr. an exp., Misc. Exp.

you are correct. Skip to page 11. ⇨

If, for October 18 you had:

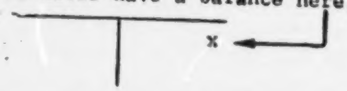
debit an expense, Freight on Purchases,

go to the next page unless you had this, also. If so, read below, first.

If, for October 13, 20 you had:

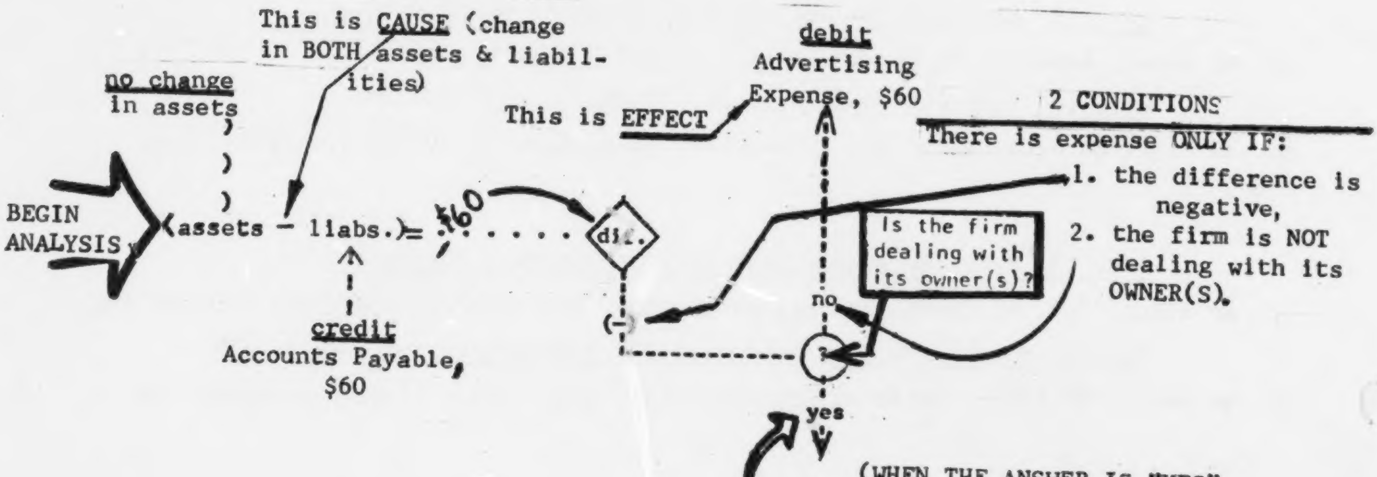
debit a liability, Miscellaneous Expense, you confused liability and expense - a surprisingly common mistake.

First, there is more Miscellaneous Expense, yet a debit reduces liabilities. If you were looking at a ledger, an expense would never have a balance here, but a liability always would. (Liability means debt, only, in accounting, NEVER drawback, as in ordinary usage.)



To emphasize the difference, here is an event involving both liability and expense.

Event:
Received a bill for newspaper advertising of the past month. $60 due in ten days.



This is CAUSE (change in BOTH assets & liabilities)
no change in assets
debit Advertising Expense, $60
This is EFFECT
BEGIN ANALYSIS
(assets − liabs.) = $60 . . . . dif.
(−)
credit Accounts Payable, $60
Is the firm dealing with its owner(s)?
no
?
yes

2 CONDITIONS

There is expense ONLY IF:
1. the difference is negative,
2. the firm is NOT dealing with its OWNER(S).

(WHEN THE ANSWER IS "YES", permanent accounts, e. g. dividends, drawing, etc., record a DISINVESTMENT.)

12. You said Freight on Purchases is an expense. (If you didn't, go to the next page.)

Perhaps you usually call the account "Freight In" or "Transportation In" or debit Merchandise when you pay for shipment from a supplier. (The last is obviously an asset account.)

More often, however, it is the fact that the account appears on the Income Statement which misleads. First, notice that it is "Cost of Goods Sold" which reduces profit.

When deciding the class of an account, it is best to think of a transaction in which it would be increased. Whatever you pay to acquire merchandise is part of its asset value. "Cost of Goods Sold" is the sacrifice (to make sales).

1.

It's the only part of that section that is necessary to the computation of gross margin.

(Income Statement excerpt)

Net Sales		$9100
Cost of Goods Sold		$3720
Gross Margin		$5380
Operating Expenses		
Salaries	$1300	
Supplies Used	100	
Rent Expense	1500	
Miscellaneous Expense	1190	4090
Net Income from Operations		$1290

2.

The rest of the section merely explains in detail the reduction in this asset which caused the firm to have the expense which is is the debit part of the adjustment.

Merchandise

1/1	(a)	2000		100 (c)
	(b)	1000		50
		1000	adj.	3720
		1000		
		1300		
	(d)	70		
(e) 6/30 bal.		2500		

Merchandise Inventory

(a)	2000	
6/30 bal.	2500	

Purchases

(b)	1000	
	1000	
	1000	
	1300	

Freight on Purchases

(d)	70	

3.

Similarly, Supplies Used could be explained by describing changes in the Supplies account.

	Begin'g supl. inv.		80 (1)
(2)	Purch. supl.	210	
(3)	less return	20	
	net	190	
(4)	Frt. on supl,	10	280
	End'g supl.		180 — (5)
	(cost of) SUPPLIES USED		100

(dr.)

Supplies

(1)	80		20 (3)
(2)	90	adj.	100 (cr.)
(4)	10		
	120		
(5) bal.	180		

4.

Whether assigned to separate accounts, or not, changes in Merchandise are asset changes.

Cost of Goods Sold				
Merchandise Inventory, January 1, 1960			$2000	(a)
Purchases (b)		$4300		
Purchases Returns	$100			(c)
Purchases Allowances	50	150		(c)
Net Purchases			4150	
Freight on Purchases			70	(d)
Cost of Goods Available for Sale			$6220	
Less: Merchandise Inventory, June 30, 1960			2500	(e)
Cost of Goods Sold			$3720	

Purchases Returns

	100 (c)

Purchases Allowances

	50 (c)

13. When cash payments are made, a debit will offset the credit to Cash. After each reason for payment of petty cash, indicate the title and class of the account which should be debited by circling a or b OR you fill in c.

A.1 Gave $5 to a Salvation Army solicitor.

a. Petty Cash Expenses, an expense   b. Donations, an expense   c.__________ a(n)__________.
(when a or b CAN'T be used)

A.2 $25 given salesman for 2-year subscription to professional magazine.

a. Professional Magazine, an expense   b. Prepaid Subscriptions, an asset   c.__________ a(n)__________.

A.3 Payment of $18 utility bill of 9/20.

a. Utility Bill of 9/20, an expense   b. Heat, Light and Power, an exp.   c.__________ a(n)__________.

A.4 Gave owner Opp $15 for personal use.

a. Otto Opp, Drawing, an expense   b. Petty Cash Expenses, an exp.   c.__________ a(n)__________.

CHECK THESE ANSWERS BEFORE GOING ON. Page 12; remove and turn upside down.

B.1 Purchased 500 6¢ stamps for the office.

a. Postage on Hand, an expense   b. Delivery Expense, a liab.   c.__________ a(n)__________.

B.2 Cab fare $3 and various other payments made, $9.

a. Miscellaneous Exp., an expense   b. Various Payments Made, a liab.   c.__________ a(n)__________.

B.3 Paid the remaining $7 due on the merchandise received from Tu and Phro.

a. Merchandise, an asset   b. Due to Suppliers, a liability   c.__________ a(n)__________.

B.4 Gave customer his money back.

a. Purchases Returns, a contra-asset   b. Sales Returns, an expense   c.__________ a(n)__________.

(CHECK, p. 12 right side up, then continue.)

C.1 Paid for blank forms, ink etc. delivered by Ace Co.

a. Office Equipment, an asset   b. Accts. Payable, a liability   c.__________ a(n)__________.

C.2 Paid 18 dollar shipping cost on credit sale.

a. Freight In, an expense   b. Freight Out, an expense   c.__________ a(n)__________.

C.3 Refunded $10 on merchandise returned by customer.

a. Purchases Returns, a contra-asset   b. Purch. Discount, an expense   c.__________ a(n)__________.

C.4 $30 to be returned on payday, to the office boy.

a. Misc. Advances, an expense   b. Advance Wage Payments, an asset   c.__________ a(n)__________.

IF YOU SKIPPED FROM PAGE 8,

ANSWERS, 13 - C

1. *Supplies on hand, asset* (or Office Supplies, etc.)
2. b (Freight Out)
3. *Sales returns, a contra-revenue account* (or Sales Returns and Allowances)
4. b (Advance Wage Payments)

START HERE:

14. Indicate the title and class of the account which should be debited when reimbursing for the following petty cash payments. Circle a or b IF IT could POSSIBLY be correct, or you fill in c.

example: Paid semiannual interest on our note. (The debit should be to...)

a. Interest earned, an expense b. Interest Expense, a liability

c. Interest Expense a(n) expense.

1. Paid freight bill on incoming goods.

a. Paid Freight Bill, an asset b. Transportation In, an asset

c. ____________________ a(n) ____________________.

2. Desk top file purchased for $15.

a. Purchases, an asset b. Office Supplies, an asset

c. ____________________ a(n) ____________________.

3. $8 to customer returning cash sale item.

a. Merchandise, an asset b. Sales Returns and Allowances, an expense

c. ____________________ a(n) ____________________.

4. Paid 2-year premium on our fire insurance.

a. Fire Insurance, a liability b. Deferred Fire Insurance Premiums, an asset

c. ____________________ a(n) ____________________.

5. Paid C. O. D. for small shipment of merchandise.

a. Purchases, an asset b. Shipment of Merchandise, an expense

c. ____________________ a(n) ____________________.

6. Gave customer refund of $12 for merchandise returned.

a. Merchandise Returned, a contra-revenue acct. b. Customer refund, an expense

c. ____________________ a(n) ____________________.

# If missed, review page 9.

14. 1. b (Transportation In) #

2. *Office Equipment (or equivalent), an asset*
(NOT Purchases, unless it's merchandise.)

3. *Sales Returns & Allowances, a contra-revenue account*
(NOT Merchandise when amount is a selling price.)

4. b (Def. Fire Ins. Prems. is equivalent to Prepaid Fire Ins.)

5. a (Purchases) #

6. *Sales Returns and Allowances* (or Sales Returns).
a contra-revenue acct. (Mdse. Returned would be Purchases Returns)

Titles tell about **OUR firm.**

NOTE: IF YOU MISSED MORE THAN ONE of the above, better return to the review on page 10. Otherwise, page 13 is next.

(Unless you went there first, of course.)

ANSWERS, 13 - B

1. *Postage on hand, an asset* (or an equivalent asset; or Postage Expense might be used)
2. a (Miscellaneous Expense)
3. b (Due to Suppliers - synonymous with Accounts Payable)
4. *Sales returns, a contra-revenue account* (or Sales Returns and Allowances)

ANSWERS, 13 - A

1. b (Donations)
2. b (Prepaid Subscriptions)
3. b (Heat, Light and Power) - Accounts rarely exist for a single transaction. DON'T confuse the description of the event with the name of an account.
4. *Otto Opp, Drawing, a contra-proprietorship (acct.)*
(or O. Opp., Personal; O. Opp., Capital)
(Remember; transaction with owner can't affect profit.)

15. Here is an analysis of the transactions which set up and reimbursed a petty Cash fund:

Identify transactions

1st line only	ACCOUNT TITLES	CHANGES in ASSETS Dr.	CHANGES in ASSETS Cr.	LIABILITIES Dr.	LIABILITIES Cr.	Owner Equity CHANGES PROFIT ADDITIONS Dr.	PROFIT ADDITIONS Cr.	PROFIT REDUCTIONS Dr.	PROFIT REDUCTIONS Cr.	OTHER Dr.	OTHER Cr.
Nov. 1	Petty Cash	50—									
	Cash		50—								
20	Selling Expenses							1990			
	General Expenses							715			
	Freight In	372									
	Supplies on Hand	128									
	Sales Returns							1150			
	Cash		4355								

A. How much money should the fund contain just before it was replenished?

$________

B. Does the analysis apply to 1 or [✓ 2] or equally to both

(CIRCLE ONE ABOVE.)

summary of vouchers:

1

Receipts Date	Receipts Amount	Date	Explanation	Total Disbursements	Distribution of Payments Freight IN	Sell'g Expenses	Gen. Expenses	Sundries Amount	Sundries Account
1970 Nov.		1970 Nov.							
1	50.00	1	Check No. 115						
		1	Vchr. No. 1	1.30			1.30		
		2	Vchr. No. 2	6.25		6.25			
		5	Vchr. No. 3	1.28				1.28	Supplies on Hand
		9	Vchr. No. 4	11.90		11.90			
		12	Vchr. No. 5	1.75		1.75			
		13	Vchr. No. 6	5.85			5.85		
		16	Vchr. No. 7	3.72	3.72				
		20	Vchr. No. 8	11.50				11.50	Sales Returns
	50.00	20	Totals	43.55	3.72	19.90	7.15	12.78	
		20	Balance	6.45					
	50.00			50.00					

summary of vouchers:

2

Receipts Date	Receipts Amount	Date	Explanation	Total Disbursements	Distribution of Payments Supplies on hand	Sell'g Expenses	Gen. Expenses	Sundries Amount	Sundries Account
1970 Nov.		1970 Nov.							
1	50.00	1	Check No. 115						
		1	Vchr. No. 1	1.30			1.30		
		2	Vchr. No. 2	6.25		6.25			
		5	Vchr. No. 3	1.28	1.28				
		9	Vchr. No. 4	11.90		11.90			
		12	Vchr. No. 5	1.75		1.75			
		13	Vchr. No. 6	5.85			5.85		
		16	Vchr. No. 7	3.72				3.72	Freight-In
		20	Vchr. No. 8	11.50				11.50	Sales Returns
	50.00	20	Totals	43.55	1.28	19.90	7.15	15.22	
		20	Balance	6.45					
	50.00			50.00					

C. Which case (3 or 4) would call for the same November 20 debits and credits?

3\. 11/9--Refund on mdse., $11.50, Customer entertaining, $13.90
11/11--Handbill distribution $6, Supplies for office, $1.28
11/15--Misc. General Exp., $7.15
11/20--C.O.D. shipping chg. on merchandise rec'd., $3.72.

4\. 11/1--Refund on Sale, $11.50
11/2--Purchased envelopes, $1.28
11/6--Miscellaneous costs of selling, $19.90, Express on goods received, $10.87.
11/18--Window washing, $5.85.

14.

ANS. 15 A. *$6.45*

B. equally to both (same accounts and amounts needed in each case)

C. 3. 11/9--Refund on mdse., $11.50, Customer entertaining, $13.90
11/11--Handbill distribution $6, Supplies for office, $1.28
11/15--Misc. General Exp., $7.15
11/20--C.O.D. shipping chg. on merchandise rec'd., $3.72.

Sales Returns
Selling Expenses
Freight In

(4 has different total amount of payments)

---

16. I. Show the journal entry to establish a petty cash fund of $40 for Richard Cavett 's firm.

Mar 1

II. Payments were made from the fund as follows:

March 1 - Gave salesman $7.00 for bus fare and $10 advance on his salary.
2 - Mr. Cavett withdrew $7.
5 - Misc. Office Expense, $2.00
8 - Truck freight on a purchase delivered, $6.50.

How much cash did the fund contain? $________.

III. Circle the correct effect of reimbursing with a $32.50 check on March 9. (A, B or C)

(Use of this "transaction analysis form" is illustrated on pp.10,11 & 12 of supplement.)*

SYMBOLS: A = total assets
L = total liabilities P = total proprietorship
TEMP. = temporary
PERM. = permanent

[✓ A.]

DATE *3/9* external (circle a, b, or c.)
[✓ a.] It is a customer. b. It is a supplier. [✓ c.] It is dealing with its owner.

(✓) ___ internal

Equation summary:
CHANGE in A = $ *16.00* [✓ −] +
CHANGE in L = $ *——* − +
CHANGE in P TEMP. = $ *9.00* [✓ −] +
CHANGE in P PERM. = $ *7.00* [✓ −] +

(circle appropriate change)

Schedule of [✓ A] L P change(s)			Schedule of A L [✓ P] change(s)		
Transportation In	$ 6.50	− [✓ +]	Richard Cavett , Drawing	$ 7.00	[✓ −] +
Advances to Employees	$ 10.00	− [✓ +]	Travel Expense	$ 7.00	[✓ −] +
Cash	$ 32.50	[✓ −] +	Miscellaneous Office Exp.	$ 2.00	[✓ −] +
	$	− +		$	− +

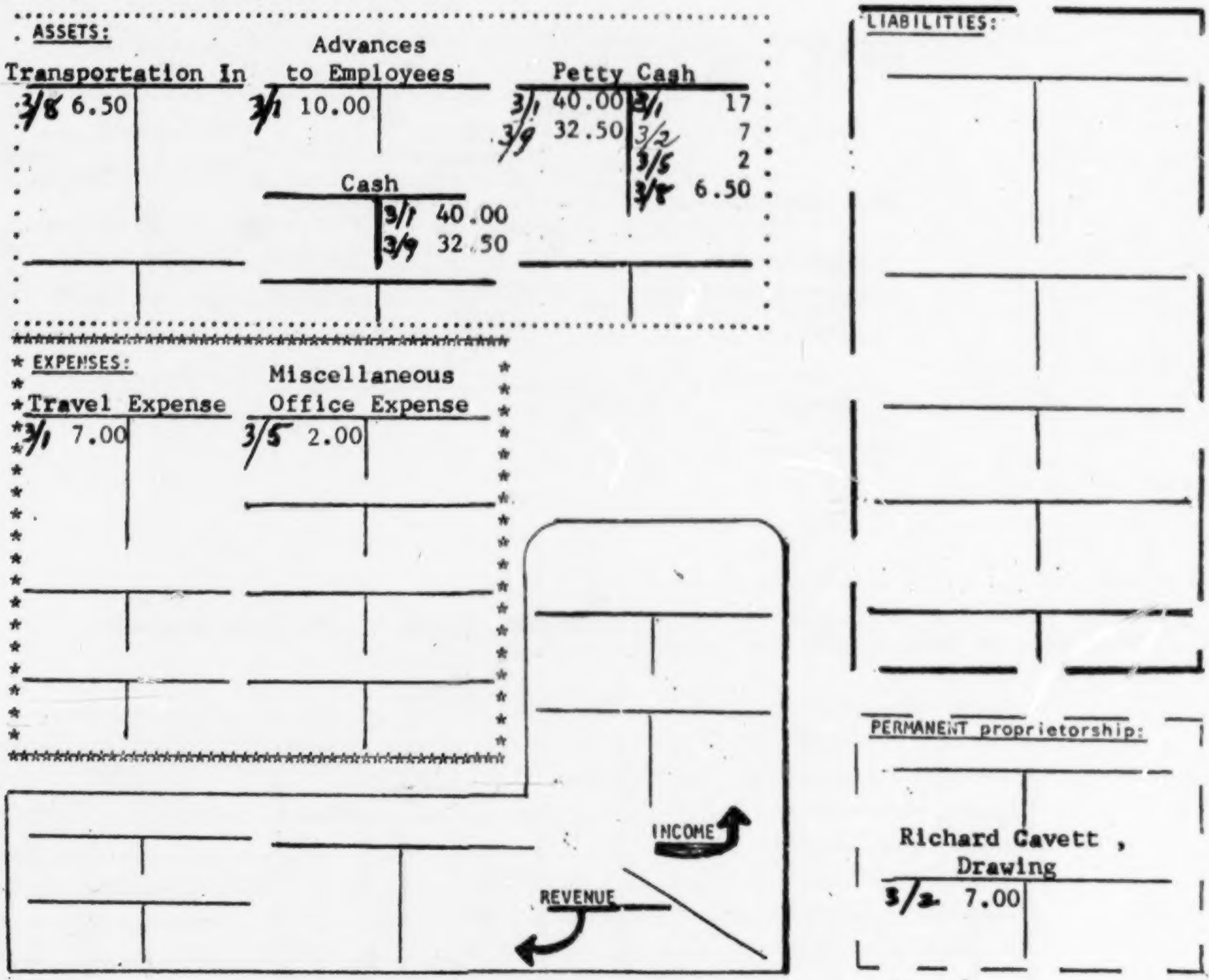
Schedule of A L P change: ________ $______ − +

**"The Accounting Model"--yellow cover.*

B.

			Debit	Credit
1970				
Mar.	8	Transportation In	6 50	
	2	Richard Cavett , Drawing	7 00	
	1	Travel Expense	7 00	
	1	Advances to Employees	10 00	
	5	Miscellaneous Office Expenses	2 00	
	9	Cash		32 50
		To reimburse petty cash		

C. (posting for Petty Cash,only)



ASSETS:
EXPENSES:
INCOME
REVENUE
LIABILITIES:
PERMANENT proprietorship:

Transportation In

3/8 6.50	

Advances to Employees

3/1 10.00	

Petty Cash

3/1 40.00	3/1 17
3/9 32.50	3/2 7
	3/5 2
	3/8 6.50

Cash

	3/1 40.00
	3/9 32.50

Travel Expense

3/1 7.00	

Miscellaneous Office Expense

3/5 2.00	

Richard Cavett , Drawing

3/2 7.00	

B and C are wrong for different reasons.

C changes the Petty Cash account when the imprest amount is not being changed.

____ has more than one date for the same transaction (instead of the check date only).

16.

ANS. 16 I.

Mar	1	Petty Cash		40.00	
		Cash			40.00
		To establish $40 fund.			

II. $ 7.50

III. [✓ A]

DATE 3/9 external (Circle a, b, or c.)

[✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. [✓ c.] It is dealing with its owner.

(✓) ___ internal

Equation summary:
CHANGE in A = $ 16.00 [✓ −] +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ 9.00 [✓ −] +
CHANGE in P PERM. = $ 7.00 [✓ −] +

(circle appropriate change)

Schedule of [✓ A] L P change(s)

Transportation In $ 6.50 − [✓ +]
Advances to Employees $ 10.00 − [✓ +]
Cash $ 32.50 [✓ −] +
$ ___ − +

Schedule of A L [✓ P] change(s)

Richard Cavett , Drawing $ 7.00 [✓ −] +
Travel Expense $ 7.00 [✓ −] +
Miscellaneous Office Exp. $ 2.00 [✓ −] +
$ ___ − +

Schedule of A L P change: ________ $ ___ − +

C

B

---

17. In the following petty cash record, circle the titles of the three accounts which will be debited for the payments to date (Jan. 15).

PETTY CASH RECORD

DATE		EXPLANATION	VCHR. NO.	RECEIPTS	PAY-MENTS	DISTRIBUTION OF PAYMENTS			
						FREIGHT-IN	Tel.& Tel.	SUNDRIES	
								ACCOUNT	AMOUNT
19-- Jan.	6	Establish fund		100 00					
	10	Stationery-E. M. Co.	1		15 00			Office Supplies	15 00
	14	R.R. Express	2		17 00	17 00			
	15	Collect telegram	3		3 50		3 50		

I. On January 13, the FUND contained money amounting to $__________.
However, the balance of the "Petty Cash" ACCOUNT remains at $__________.

II. On the 15th, how many vouchers should the petty cashier have? ______ vouchers.
How much cash? $__________

III. On the next page, circle the letter of the correct analysis for replenishing the fund after the payments shown above.

Identify the first account in each transaction by number, date, etc.

(Illustrations of the use of these transaction analysis forms are on page 6 of the supplement.)

ALWAYS choose plus or minus by effect on basic equation, NOT the ACCOUNT BALANCE.

A.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
				expense	income	revenue	Other
n. ⑥	Petty Cash	+ 100					
○	Cash	- 100					
⑮	Petty Cash	+ 35.50					
○	Cash	- 35.50					

Identify transactions

B.

1st line only ↓	ACCOUNT TITLES	CHANGES in				Owner Equity CHANGES					
		ASSETS		LIABILITIES		PROFIT ADDITIONS		PROFIT REDUCTIONS		OTHER	
		DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.
1/6	Petty Cash	100 –									
	Cash		100 –								
1/15	Freight In	17 –									
	Office Supplies	15 –									
	Collect Telegram							3 50			
	Cash		35 50								

C.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
				expense	income	revenue	Other
Jan. ⑥	Petty Cash	+ 100.–					
○	Cash	- 100.–					
Jan. ⑮	Cash	- 35.50					
○	Freight In	+ 17.–					
○	Office Supplies	+ 15.–					
○	Telephone and Telegraph			- 3.50			

A and B are wrong for different reasons.

_____ overstates Petty Cash and omits debits for the payments.

_____ uses an explanation as though it were an account title.

17.

DATE		EXPLANATION	VCHR. NO.	RECEIPTS		PAYMENTS		DISTRIBUTION OF PAYMENTS					
								FREIGHT-IN		Tel. & Tel.		SUNDRIES	
												ACCOUNT	AMOUNT
19-- Jan.	6	Establish fund		100	00								
	10	Stationery-E. M. Co.	1			15	00					Office Supplies	15 00
	14	R.R. Express	2			17	00	17	00				
	15	Collect telegram								3	50		

I. ...money amounting to $85

$100 (debit balance).

II. $64.50 and 3 vouchers.

III.

C.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S) expense	income	revenue	Other
Jan. 6	Petty Cash	+ 100.-					
	Cash	- 100.-					
Jan. 15	Cash	- 35.50					
	Freight In	+ 17.-					
	Office Supplies	+ 15.-					
	Telephone and Telegraph			- 3.50			

A

B

18. **Facts:** On May 5 a $20 petty cash fund is established.

Payments from the fund were as follows:

May 6 - $2 for delivery to customer
7 - Miscellaneous expense payments:
newspaper $1, tips $2
9 - $10 purchase of Office Supplies
10 - $4 of miscellaneous expenses

On May 12 the fund was increased to $30 at the same time the above amounts were replaced.

I. How much should the petty cashier have on May 11?

$________

2. Circle the letter of the correct record or analysis for May 12.

A.

12	Delivery Expense	2 –	
	Miscellaneous Expense	3 –	
	Office Supplies	10 –	
	Miscellaneous Expense	4 –	
	Petty Cash	10 –	
	Cash		29 –
	Reimburse and increase to $30		

B.

DATE 5/12 external (Circle a, b, or c.) a. It is a CUSTOMER. [✓ b.] It is a SUPPLIER. c. It is dealing with its owner.

(✓) ___ internal

Equation summary:
CHANGE in A = $ 2 [✓ −] +
CHANGE in L = $ — − +
CHANGE in P TEMP. = $ 2 – [✓ −] +
CHANGE in P PERM. = $ —— − +

(circle appropriate change)
Schedule of A L [✓ P] change(s): Cash $ 2 – [✓ −] +
Schedule of A L [✓ P] change(s): Delivery Exp. $ 2 [✓ −] +
Schedule of A L P change: ____ $ ____ − +

. . . .

DATE 5/12 external (Circle a, b, or c.) [✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ___ internal

Equation summary:
CHANGE in A = $ 7 – [✓ −] +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ 7 [✓ −] +
CHANGE in P PERM. = $ —— − +

(circle appropriate change)
Schedule of A L [✓ P] change(s): Miscellaneous Exp. $ 7.00 [✓ −] +
Schedule of [✓ A] L P change(s): Cash $ 7.00 [✓ −] +
Schedule of A L P change: ____ $ ____ − +

. . . .

DATE 5/12 external (Circle a, b, or c.) [✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ___ internal

Equation summary:
CHANGE in A = $ 0 − +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ —— − +
CHANGE in P PERM. = $ —— − +

(circle appropriate change)
Schedule of [✓ A] L P change(s): Office Supplies $ 10 − [✓ +]
Cash $ 10 [✓ −] +
Schedule of A L P change(s): ____ $ ____ − +
Schedule of A L P change: ____ $ ____ − +

. . . .

DATE 5/12 external (Circle a, b, or c.) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ✓ internal

Equation summary:
CHANGE in A = $ 0 − +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ —— − +
CHANGE in P PERM. = $ —— − +

(circle appropriate change)
Schedule of A L P change(s): Petty Cash $ 10 − [✓ +]
Cash $ 10 [✓ −] +
Schedule of A L P change(s): ____ $ ____ − +
Schedule of A L P change: ____ $ ____ − +

(continue on p. 20)

20.

Identify the first account in each transaction by number, date, etc.

ALWAYS choose plus or minus by effect on basic equation NOT the ACCOUNT BALANCE.

C.

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S) expense	income	revenue	Other
5/⑫ Delivery Exp.	+ -	+ -	+ - 2.00	+ -	+ -	+ -
○ Misc. Expense	+ -	+ -	+ - 7.00	+ -	+ -	+ -
○ Office Supplies	+ 10.00 -	+ -	+ -	+ -	+ -	+ -
○ Petty Cash	+ 10.00 -	+ -	+ -	+ -	+ -	+ -
○ Cash	+ - 29.00	+ -	+ -	+ -	+ -	+ -

D.

EXPENSE

Delivery to Customer
5/12 2.00

Miscellaneous Exp.
5/12 7.00

LIABILITIES

REVENUE / INCOME
(and contra-)

Petty Cash
5/5 20.00
5/12 10.00

Office Supplies
5/12 10.00

Cash
xxx 5/5 20.-
5/12 29.00

ASSETS & CONTRA-ASSETS

PERM. PROPRIETORSHIP

_____ uses a description as though it were an account title.

_____ does not credit Cash for the amount of the check.

_____ makes two debits to the same account, instead of recording all the transactions as though they were one.

3. Review the facts on page 18.

   a. On May 13, the Petty Cash account should have (complete the correct one)

      a debit balance of $____________.

      a credit balance of $____________.

   b. Here are three petty cash accounts. Fill the blanks on the right.

Petty Cash

A.

1970							
May 5		✓	30 00				

a $__________ debit balance

Petty Cash

B.

1970							
May 5		✓	20 00				
12		✓	10 00				

a $__________ debit balance

Petty Cash

C.

1970				1970			
May 5		✓	20 00	May 12		✓	19 00
12		✓	10 00				

a $__________ debit balance

   c. Return to b and circle the letter of the account which has been posted from correctly journalized facts (p. 18) about the Petty Cash account.

22.

18. 1. $1

2.

(C)

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S) expense	income	revenue	Other
5/12 Delivery Exp	+ -	+ -	+ - 2.00	+ -	+ -	+ -
○ Misc. Expense	+ -	+ -	+ - 7.00	+ -	+ -	+ -
○ Office Supplies	+ 10.00 -	+ -	+ -	+ -	+ -	+ -
○ Petty Cash	+ 10.00 -	+ -	+ -	+ -	+ -	+ -
○ Cash	+ - 29.00	+ -	+ -	+ -	+ -	+ -

3. a. a debit balance of $30

D

B

A

b & c.

Petty Cash

1970				
May 5		✓	20 00	
12		✓	10 00	

(B.)

a $30 debit balance

a $30 debit balance

a $11 debit balance

19.

PETTY CASH RECORD

DATE		EXPLANATION	VCHR. NO.	RECEIPTS	PAY-MENTS	Sales Rets.	Misc Exp.	SUNDRIES ACCOUNT	SUNDRIES AMOUNT
July	5	Balance		30 —					
	6	Hastings	40		3 00			Supplies on Hand	3 00
	8	Drawing	41		5 00			M. Twain, Persl	5 00
	8	Sundries	42		2 00		2 00		
	9	Lyndon Johnson - Rt	43		4 00	4 00			
	12	Contribution	44		5 00		5 00		
	16	Hastings	45		1 00			Supplies on Hand	1 00

1. (Fill the appropriate blank.)
If the petty cashier has $11.50, and vouchers as shown, the cash is over by $____.
the cash is short by $____.

2. Cash in the fund was actually $10 on July 16.
Circle the letter of the correct analysis, OR YOU COMPLETE E, correctly.

A. DATE 7/16 external (Circle a, b, or c.) [✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. [✓ c.] It is dealing with its owner.

(✓), ___ internal

Equation summary:
CHANGE in A = $ 16.00 [✓ −] +
CHANGE in L = $ — − +
CHANGE in P TEMP. = $ 16.00 [✓ −] +
PERM. = $ — − +

(circle appropriate change)

Schedule of [✓ A] L P change(s)
Cash $ 20.00 [✓ −] +
Supplies on Hand $ 4.00 − [✓ +]

Schedule of A L [✓ P] change(s)
Mark Twain, Personal 5.00 [✓ −] +
Misc. Expense $ 7.00 [✓ −] +

Schedule of A L [✓ P] change: Sales Returns $ 4.00 [✓ −] +

B. DATE 7/16

external (Circle a, b, or c.)
[✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. [✓ c.] It is dealing with its owner

(✓) ___ internal

Equation summary:
CHANGE in A = $ 16.00 [✓ −] +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ 5.00 [✓ −] +
CHANGE in P PERM. = $ 11.00 [✓ −] +

(circle appropriate change)

Schedule of [✓ A] L P change(s)
Casn $20.00 [✓ −] +
Supplies on Hand $ 4.00 − [✓ +]

Schedule of A L [✓ P] change(s)
Sales Returns $4.00 [✓ −] +
Miscellaneous Expense $7.00 [✓ −] +

Schedule of A L [✓ P] change: Mark Twain, Personal $5.00 [✓ −] +

. . . .

C. DATE 7/16

external (Circle a, b, or c.)
[✓ a.] It is a CUSTOMER b. It is a SUPPLIER [✓ c.] It is dealing with its owner

(✓) ___ internal

Equation summary:
CHANGE in A = $ 16.00 [✓ −] +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ 11.00 [✓ −] +
CHANGE in P PERM. = $ 5.00 [✓ −] +

(circle appropriate change)

Schedule of [✓ A] L P change(s)
Cash $ 20.00 [✓ −] +
~~Supplies on Hand~~ $ 4.00 − [✓ +]

Schedule of A L [✓ P] change(s)
Mark Twain, Personal $ 5.00 [✓ −] +
Misc. Expense $ 7.00 − [✓ +]

Schedule of A L [✓ P] change: Sales Returns $ 4.00 − [✓ +].

. . . .

D. DATE 7/16

external (Circle a, b, or c.)
[✓ a.] It is a CUSTOMER b. It is a SUPPLIER [✓ c.] It is dealing with its owner

(✓) ___ internal

Equation summary:
CHANGE in A = $ 16.00 [✓ −] +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ 11.00 [✓ −] +
CHANGE in P PERM. = $ 5.00 [✓ −] +

(circle appropriate change)

Schedule of [✓ A] L P change(s)
Cash $ 20.00 − +
Supplies on Hand $ 4. — − +

Schedule of A L [✓ P] change(s)
Mark Twain, Personal $ 5.00 − +
Miscellaneous Expense $ 7.00 − +

Schedule of A L [✓ P] change: Sales Returns $ 4.00 − +.

. . . .

E. DATE ______

external (Circle a, b, or c.)
a. It is a CUSTOMER b. It is a SUPPLIER c. It is dealing with its owner

(✓) ___ internal

Equation summary:
CHANGE in A = $ ______ − +
CHANGE in L = $ ______ − +
CHANGE in P TEMP. = $ ______ − +
CHANGE in P PERM. = $ ______ − +

(circle appropriate change)

Schedule of A L P change(s)
______ $ ______ − +
______ $ ______ − +

Schedule of A L P change(s)
______ $ ______ − +
______ $ ______ − +

Schedule of A L P change: ______ $ ______ − +

______ and ______ have incorrect amounts of TEMP. proprietorship in the summary.

______ has incomplete schedules (so they fail to "prove" the summary amounts).

______ has schedule amounts which disagree (in sign) with a related summary amount.

24.

19. 1..the cash is over by $1.50

2. YOU fill in:

. . . .

E. DATE 7/16 external (Circle a, b, or c.)

both

[✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. [✓ c.] It is dealing with its owner.

(✓) ___ internal

Equation summary:
CHANGE in A = $ 16.00 [✓ −] +
CHANGE in L = $ — − +
CHANGE in P TEMP. = $ 11.00 [✓ −] +
CHANGE in P PERM. = $ 5.00 [✓ −] +

(circle appropriate change)

Schedule of [✓ A] L P change(s)
Cash $ 20.00 [✓ −] +
Supplies on Hand $ 4.— − [✓ +]

Schedule of A L [✓ P] change(s)
Mark Twain, Personal $ 5.00 [✓ −] +
Miscellaneous Expense $ 7.00 [✓ −] +

Schedule of A L [✓ P] change: Sales Returns $ 4.00 [✓ −] +

A B

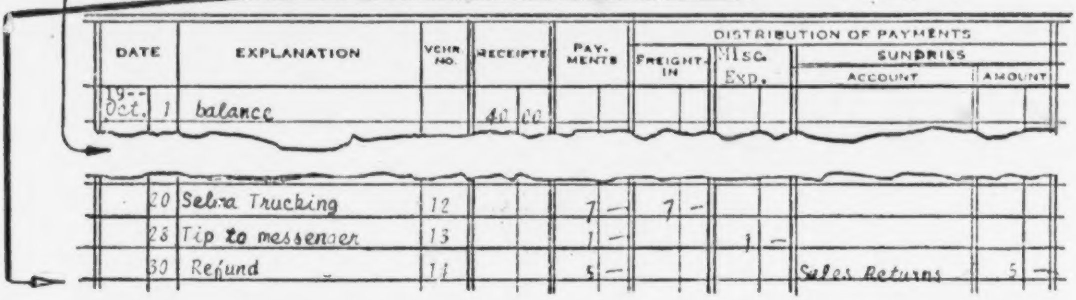
D

C

Failure to Reimburse

20. An imprest fund is replenished, routinely, at the end of a month if it has even one voucher (instead of money). Because financial statements will be prepared, more than convenience is involved.

EXAMPLE: The fund was reimbursed for payments (not shown) prior to October 20. However, no check was written on October 31, an oversight.



DATE		EXPLANATION	VCHR NO.	RECEIPTS	PAYMENTS	DISTRIBUTION OF PAYMENTS: FREIGHT-IN	Misc. Exp.	SUNDRIES: ACCOUNT	AMOUNT
19-- Oct.	1	balance		40 00					
	20	Selma Trucking	12		7 —	7 —			
	28	Tip to messenger	13		1 —		1 —		
	30	Refund	11		5 —			Sales Returns	5 —

You should recognize that the memoranda in the above petty cash book identify unrecorded transactions of October.

Look at page 4 of the blue supplement.

The adjustment steps apply.

Step 1. (Remember, what "should be" reported is what did happen--not all of the forgotten reimbursement.)

Increases are needed in:
Freight In
Miscellaneous Expense
Sales Returns

You underline which asset has less money than its account shows.

Cash

Petty Cash

Step 2. The ledger contains:
too little of the above (Freight In, etc.)

a Petty Cash balance at the imprest amount, $40.

Complete the effects of adjustment step 3.
Make sure amounts are entered under proper column headings. If necessary,-see p. 6, MODEL suppl.

	ACCOUNT TITLES	CHANGES in				Owner Equity CHANGES					
		ASSETS		LIABILITIES		PROFIT ADDITIONS		PROFIT REDUCTIONS		OTHER	
		DR.	CR.	DR.	CR.	DR	CR	DR	CR	DR.	CR
31	Freight In										

ANS. 20.

Identify transactions

1st line only

	ACCOUNT TITLES	CHANGES in ASSETS DR	ASSETS CR	LIABILITIES DR.	LIABILITIES CR.	Owner Equity CHANGES PROFIT ADDITIONS DR	PROFIT ADDITIONS CR	PROFIT REDUCTIONS DR	PROFIT REDUCTIONS CR	OTHER DR.	OTHER CR
10/31	Freight In	7 —									
	Miscellaneous Expense							1 —			
	Sales Returns							5 —			
	Petty Cash		13 —								

(Same as reimbursement EXCEPT that Petty Cash, rather than Cash, is reduced.)

Check location of amounts carefully.

CASH OVER AND SHORT

21. In operating an imprest fund, occasional errors in making change are to be expected. It's possible, too, for a voucher to be lost or incorrectly filled in. The condition in part 1. of frame 19 (page 22) is an example.

With $11.50 in cash, the check would be written for $18.50. The rest of the credit might have been made to miscellaneous income, but the following is more likely.

31	Supplies on Hand	4 —	
	Sales Returns	4 —	
	Miscellaneous expense	7 —	
	Mark Twain, Personal	5 —	
	Cash Over and Short		1 50
	Cash		18 50
	To reimburse petty cash.		

Cash over and short may be either an income or an expense account, depending on its balance at the end of a year.

If the account looks like this at year's end:

Cash Over & Short

Page 42

1970					1970				
May	9		✓	1 00	Feb.	18		✓	20
					July	6		✓	10
					Oct.	2		✓	50

will it be reported on the Income Statement in the section labelled A, or in the section labelled B? (circle)

A B

Income Statement

Revenue or income from operations:		
	Total $XXXXXXX	
Operating Expenses:		
	Total $XXXXXXX	
Non-operating items:		$XXXXX
(+'s) A.	(-'s) B.	XXXXX
Net income..........................		$XXXXX

22. Return to frame 18 (page 18).

If, instead of $1, the petty cashier had only fifty cents:

the check to replenish would have been for

$__________, and

Cash over and short would have been debited credited.

21. B (20¢ debit balance means net expense)

Impossible Solutions

23. If a petty cashier fails verify that his cash is correct for the vouchers he has, he will receive a check equal to the payments he has made.

a. If his cash was short, the balance of the Petty Cash account

____(✓)will equal the fund cash ____(✓)will exceed the fund cash ____(✓)will be exceeded by fund cash

b. Should the cash credit in a reimbursing entry be (underline)

enough to restore the imprest amount / enough to cover the payments made

22. $29.50
debited

---

24. After establishing a $35 fund, the following petty cash payments were made:

11/1--Refund on Sale, $11.
11/2--Purchased envelopes, $1.
11/6--Miscellaneous costs of selling, $19.90

A $30 check was then issued to bring the money back to $35. What is wrong with this analysis for the reimbursement?

23. a. will exceed the fund cash

b. enough to restore the imprest amount

DATE 11/7 external (Circle a, b, or c.) [✓ a. It is a CUSTOMER.] b. It is a SUPPLIER. c. It is dealing with its owner.

(✓), ___ internal

Equation summary:
CHANGE in A = $ 29.00 [✓ −] +
CHANGE in L = $ — − +
CHANGE in P TEMP. = $ 30.90 [✓ −] +
CHANGE in P PERM. = $ — − +

(circle appropriate change)

Schedule of A L [✓ P] change(s)		Schedule of [✓ A] L P change(s)	
Sales Returns	$ 11.00 [✓ −] +	Cash	$ 30.00 [✓ −] +
Selling Expense	$ 19.90 [✓ −] +	Office Supplies	$ 1.00 − [✓ +]

Schedule of A L P change: ______________ $________ − +

28.

A solution is impossible if: the money in the fund is not the imprest amount, or if the ledger is unbalanced by the changes recorded.

If you found nothing wrong in frame 24, review your work with this in mind. If you found something wrong, will a correction you identified cure one of the signals of an impossible solution?

---

25. The equation summarized in frame 24 did not balance. Without knowing what is correct, one can be sure this isn't right.

It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

Equation summary: CHANGE in A = $ 29.00	[✓ −] +	CHANGE in P	TEMP. = $ 30.90	[✓ −] +
CHANGE in L = $ ——	− +		PERM. = $ ——	− +

Contrast it with the correct analysis. With $5 in the fund, there had been a gain from overage. No one avoids slips in recording. Everyone should check for impossible results. They are never acceptable.

……

DATE 11/7

(✓) external (Circle a, b, or c.)

___ internal

[✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

Equation summary: CHANGE in A = $ 29.00	[✓ −] +	CHANGE in P	TEMP. = $ 29.00	[✓ −] +
CHANGE in L = $ ——	− +		PERM. = $ ——	− +

(circle appropriate change)

Schedule of A L [✓ P] change(s)			Schedule of [✓ A] L P change(s)		
Sales Returns	$ 11.00	[✓ −] +	Cash	$ 30.00	[✓ −] +
Selling Expense	$ 19.90	[✓ −] +	Office Supplies	$ 1.00	− [✓ +]

Schedule of A L [✓ P] change: Cash over and short $ 1.90 − [✓ +]

……

Journalize the entry to ADJUST for failing to reimburse on November 30. Besides the vouchers, the petty cashier had $8.30.

Receipts		Date	Explanation	Total Disburse-ments	Distribution of Payments				
					Supplies on hand	Sell'g. Expenses	Gen. Expenses	Sundries	
Date	Amount							Amount	Account
1970 Nov.		1970 Nov.							
1	15.00	1	Check No. 115						
		1	Vchr. No. 1	1.30			1.30		
		12	Vchr. No. 2	6.–		6.–			
		25	Vchr. No. 3	1.–				1.–	Contributions

(Make sure it's possible!)

	30			

ANS. 25.

30	Selling Expenses		6 00	
	General Expenses		1 30	
	Contributions		1 00	
	Petty Cash			6 70
	Cash over and short			1 60
	To adjust for unreimbursed petty cash.			

---

26. Complete the totals in this record. Then analyze all transactions for April as the record reveals them.

PETTY CASH RECORD

DATE 1970		EXPLANATION	VCHR. NO.	RECEIPTS		PAYMENTS		DISTRIBUTION OF PAYMENTS FREIGHT-IN		Misc. Exp.		SUNDRIES ACCOUNT	AMOUNT	
Apr.	7	Establish - Ck. 81		100	—									
	18	R.R. Express	1			6	—	6	—					
	25	Various	2			3	—			3	—			
	26	Polisher	3			20	—					Equipment	20	—
	26	Overage										Cash Over and		
						(2	—)					Short	(2	-)
	~~26~~	~~Reduce fund~~		(50	00)									
	26	Fund Balance		50	00	27	—							

Identify the first account in each transaction by number, date, etc.

ALWAYS choose plus or minus by effect on basic equation, NOT the ACCOUNT BALANCE.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S) expense	income	revenue	Other
Apr ⑦		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -
○		+ -	+ -	+ -	+ -	+ -	+ -
		+ -	+ -	+ -	+ -	+ -	+ -

ANS. 26.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
				expense	income	revenue	Other
Apr. 7	Petty Cash	+ 100	+	+	+	+	+
		−	−	−	−	−	−
	Cash	+	+	+	+	+	+
		− 100	−	−	−	−	−
Apr. 26	Petty Cash	+	+	+	+	+	+
		− 50	−	−	−	−	−
	Cash	+ 23	+	+	+	+	+
		−	−	−	−	−	−
	Freight In	+ 6	+	+	+	+	+
		−	−	−	−	−	−
	Miscellaneous Expense	+	+	+	+	+	+
		−	−	− 3	−	−	−
	Equipment	+ 20	+	+	+	+	+
		−	−	−	−	−	−
	Cash over and short	+	+	+	+ 2	+ [illegible]	+
		−	−	−	− or	−	−

	+ 149 − 150		0		−3	+ 2	0	0	
Change:	−1	−	0	= (		−1			)
	A		L			P			

27.

Petty Cash Book

Receipts		Date	Explanation	Total Disburse-ments	Disbursements				
								Sundries	
Date	Amount				Postage	Sales Expenses	Office Expenses	Amount	Account
1970		1970							
Oct. 1	$25.00		Fund established						
		10/2	Refund - O. Miller	$ 6.00				6.00	Sales Returns
		10/8	Stamps	10.00	10.00				
			Totals	$16.00	10.00	-0-	-0-	6.00	
			Fund	25.00					
	16.00	10/10	Replenish						
	41.00		Proof	41.00					
	25.00		Balance						
		10/15	Window Cleaning	12.00		4.00	8.00		
	25.00	10/20	Fund increase						
		10/30	Handbills	13.50		13.50			
		10/30	*Shortage*	*1.00*				*1.00*	*Cash over & short*
			Totals	*26.50*		*17.50*	*8.00*	*1.00*	
			Fund	*50.00*					
	26.50		*Replenish*						
	76.50		*Proof*	*76.50*					
Nov. 1	*50.00*								

1. How much cash did the fund contain before reimbursement on October 30?

$______________

This page relates to transactions through 10/10.

DATE 10/1 external (Circle a, b, or c.) a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ✓ internal

Equation summary:
CHANGE in A = $ 0 − +
CHANGE in L = $ — − +
CHANGE in P TEMP. = $ — − +
CHANGE in P PERM. = $ — − +

(circle appropriate change)

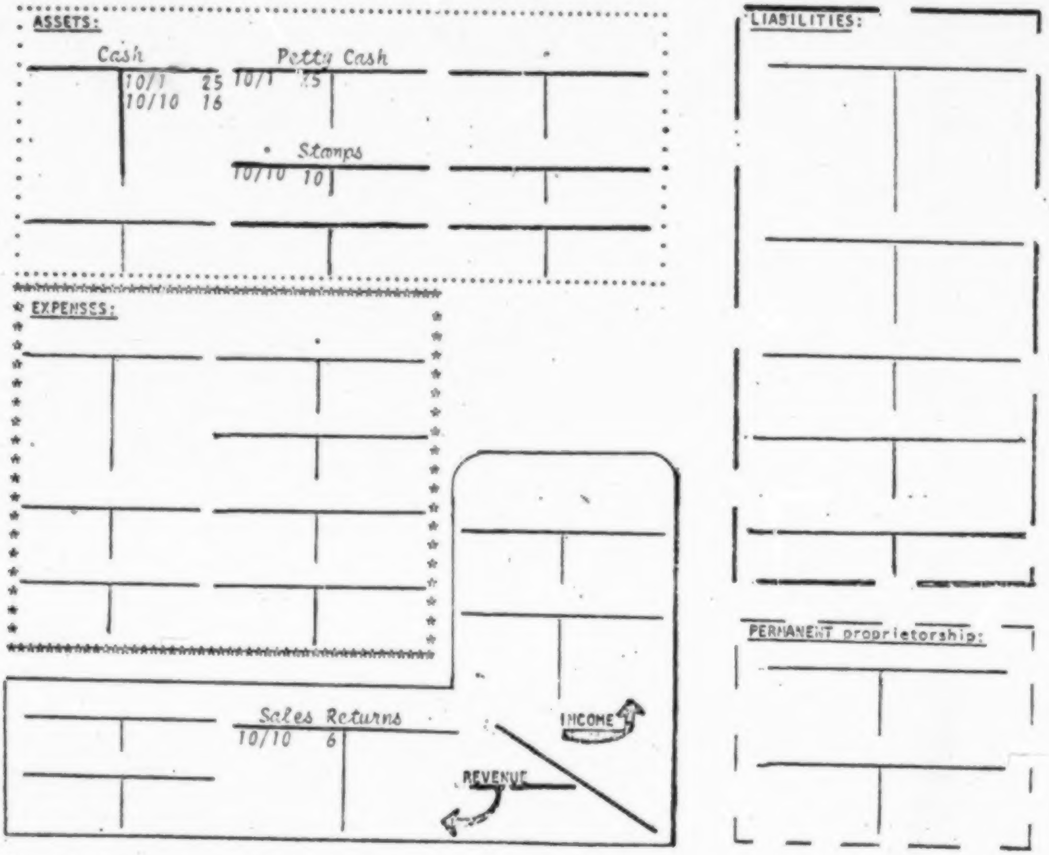
Schedule of [✓ A] L P change(s)
Cash $ 25 [✓ −] +
Petty Cash $ 25 − [✓ +]

Schedule of A L P change(s)
$ − +
$ − +

Schedule of A L P change: $ − +

2. Should the 10/10 journal entry have been posted as in A or based on transaction analysis B? (Circle the letter.)

A.


ASSETS:
Cash
10/1 25
10/10 16
Petty Cash
10/1 25
Stamps
10/10 10
LIABILITIES:
EXPENSES:
Sales Returns
10/10 6
INCOME
REVENUE
PERMANENT proprietorship:

B. DATE 10/10 external (Circle a, b, or c.) [✓ a.] It is a CUSTOMER. [✓ b.] It is a SUPPLIER. c. It is dealing with its owner.

(✓) ___ internal

Equation summary:
CHANGE in A = $ 6 [✓ −] +
CHANGE in L = $ — − +
CHANGE in P TEMP. = $ 6 [✓ −] +
CHANGE in P PERM. = $ — − +

(circle appropriate change)

Schedule of [✓ A] L P change(s)
Cash $ 16 [✓ −] +
Postage $ 10 − [✓ +]

Schedule of A L [✓ P] change(s)
Sales Returns $ 6 [✓ −] +
$ − +

Schedule of A L P change: $ − +

3. Here are two more analysis forms. You analyze the only transaction not yet recorded for October.

DATE 10/20 external (Circle a,b, or c)
a. It is a CUSTOMER b. It is a SUPPLIER c. It is dealing with its OWNER
(✓) ✓ internal

Equation summary:
CHANGE in A = $ 0 − +
CHANGE in L = $ — − +
CHANGE in P TEMP = $ — − +
PERM. = $ — − +

(circle appropriate change)
Schedule of [✓ A] L P change(s)
Cash $ 25.— [✓ −] +
Petty Cash $ 25.00 − [✓ +]
Schedule of A L P change(s)
________ $____ − +
________ $____ − +
Schedule of A L P change: ________ $____ − +

DATE______ external (Circle a,b, or c)
a. It is a CUSTOMER b. It is a SUPPLIER c. It is dealing with its OWNER
(✓) ___ internal

Equation summary:
CHANGE in A = $____ − +
CHANGE in L = $____ − +
CHANGE in P TEMP = $____ − +
PERM. = $____ − +

(circle appropriate change)
Schedule of A L P change(s)
________ $____ − +
________ $____ − +
Schedule of A L P change(s)
________ $____ − +
________ $____ − +
Schedule of A L P change: ________ $____ − +

ANS. 27.

1. $23.50 ($1 short)

2. DATE 10/10 external (Circle a, b, or c)
[✓ a.] It is a CUSTOMER [✓ b.] It is a SUPPLIER c. It is dealing with its OWNER
(✓) ___ internal

Equation summary:
CHANGE in A = $ 6.— − +
CHANGE in L = $ — − +
CHANGE in P TEMP = $ 6.— − +
PERM. = $ — − +

[✓ B.] Use the firm's accounts.

(circle appropriate change)
Schedule of [✓ A] L P change(s)
Cash $ 16.— [✓ −] +
Postage $ 10.— − [✓ +]
Schedule of A L [✓ P] change(s)
Sales Returns $ 6.— [✓ −] +
________ $____ − +
Schedule of A L P change: ________ $____ − +

DATE 10/30 external (Circle a, b, or c.)
[✓ a.] It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.
(✓) ___ internal

Equation summary:
CHANGE in A = $ 26.50 [✓ −] +
CHANGE in L = $ — − +
CHANGE in P TEMP. = $ 26.50 [✓ −] +
PERM. = $ — − +

(circle appropriate change)
Schedule of A L [✓ P] change(s)
Sales Expenses $ 17.50 [✓ −] +
Office Expenses $ 8.00 [✓ −] +
Schedule of A L [✓ P] change(s)
Cash Over and Short $ 1.-- [✓ −] +
________ $____ − +
Schedule of [✓ A] L P change: Cash $ 26.50 [✓ −] +

28. On February 2, our company established a $60 petty cash fund.

It made payments for the following purposes:

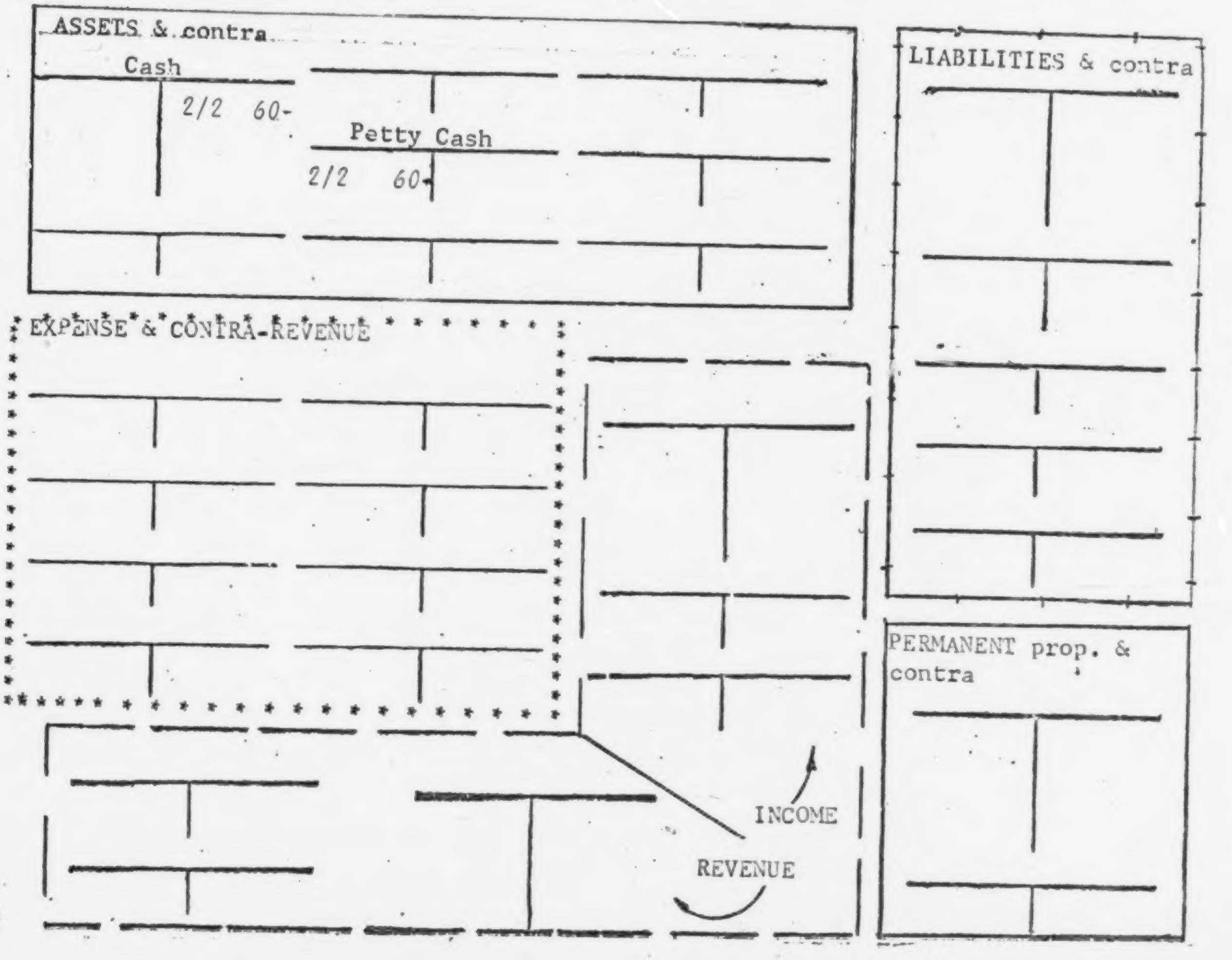
2/5 For merchandise returned, $18.50
2/9, 2/13 various small payments, $9.00, $8.00
2/20 To settle a small charge with a supplier, $20.00.

With only $4 on hand, it was decided to increase the imprest amount to $100. A check for $96 was therefore given the petty cashier.

A. IF the following journal entry is correct, post it to the segregated ledger which follows (B). DATE EACH DEBIT AND CREDIT. (Only the Feb. 20, transaction is needed. The transaction of the 2nd has already been entered.)

20	Petty Cash		40 00	
	Cash			40 00
	To increase petty cash.			
20	Miscellaneous Expense		17 00	
	Accounts Payable		20 00	
	Sales Returns		18 50	
	Cash over and short		50	
	Cash			56 00
	Reimbursement.			

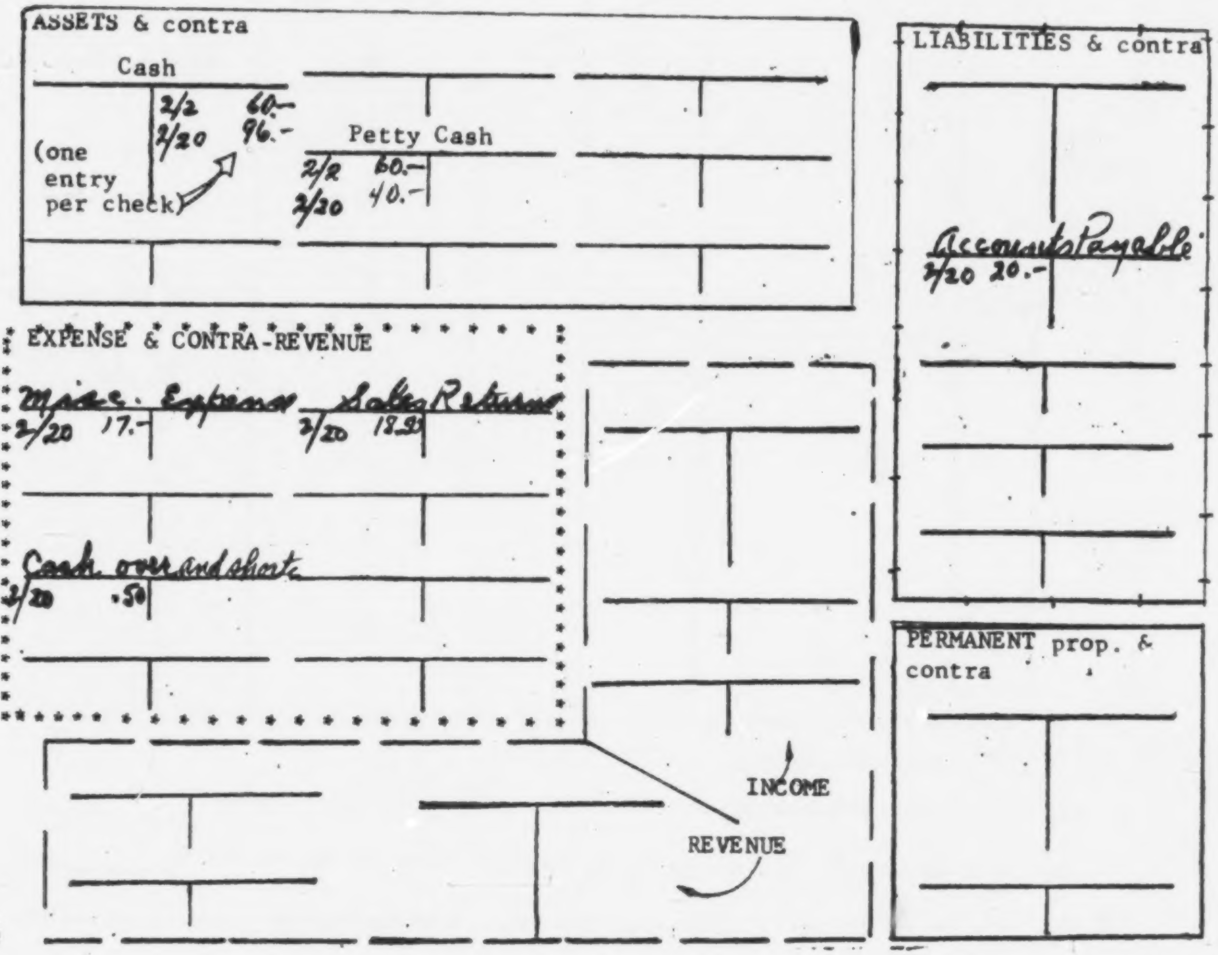
B. If the entry in A is wrong, cross it out and put the necessary changes directly into the ledger. DATE EACH DEBIT AND CREDIT.


ASSETS & contra
Cash
2/2 60-
Petty Cash
2/2 60-
LIABILITIES & contra
EXPENSE & CONTRA-REVENUE
INCOME
REVENUE
PERMANENT prop. & contra

ANS. 28.

A.

B.


ASSETS & contra
Cash
2/2 60.-
2/20 96.-
(one entry per check)
Petty Cash
2/2 60.-
2/20 40.-
LIABILITIES & contra
Accounts Payable
2/20 20.-
EXPENSE & CONTRA-REVENUE
Misc. Expense
2/20 17.-
Sales Returns
2/20 18.50
Cash over and short
2/20 .50
INCOME
REVENUE
PERMANENT prop. & contra

You should now be able to do the self-quiz problem which begins on the next page. If there is something you feel you would like to review, do that first.

29. In March of the current year, the Smothers Brothers Co. established an imprest fund for cash control. Examine its Petty Cash Book. Then answer the questions which follow it.

Petty Cash Book

Receipts					Disbursements				
Date	Amount	Date	Explanation	Total Disburse-ments	Postage	Sales Expenses	Office Expenses	Sundries Amount	Sundries Account
19A		19A							
Mar. 5	200.00	Mar 5	Establish fund						
		6	stamps	6.00	6.00				
		8	Took customer to lunch,	8.00		8.00			
		10	Advance A. H. Grove	10.00				10.00	Advances to Employees
			Trolley-car tokens	2.00			2.00		
			Electric bill	22.50		18.00	4.50		
		12	T. S. Platt, COD	8.60				8.60	Purchases
			Express	4.80				4.80	Transportation Out
		15	Express	3.50				3.50	Transportation In
			Paper towels	6.50		4.50	2.00		
		18	Extra store keys	2.00		2.00			
18	-100.00		FUND REDUCTION						
	100.00			73.90	6.00	32.50	8.50	26.90	
18	73.90		Balance	100.00					
	173.90			173.90					
Mar. 18	100.00		Proof (balance)						
		Mar. 22	Refund, V. Trook	40.00				40.-	Sales Returns
		25	Misc. supplies	15.70		3.30	12.40		
		28	T. Smothers, pers.	20.00				20.-	T. Smothers, drawing

1. How many checks were written to the Petty Cashier through March 28? __________

2. How much cash was in the fund just before it was reduced? $__________.

3. How much cash should the Petty Cashier have on March 28? $__________.

4. The March 28 petty cash vouchers represent unrecorded debits totaling $__________.

ANSWER SHEET - REMOVE AND CONTINUE on page 39.

Identify the first account in each transaction by date.

6

ALWAYS choose plus or minus by effect on basic equation, NOT the ACCOUNT BALANCE.

ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S)			
			expense	income	revenue	Other
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____
____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____	+ ____ - ____

DATE ____

7c.

(✓) ____ external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A = $____ − +
CHANGE in L = $____ − +
CHANGE in P: TEMP. = $____ − +
CHANGE in P: PERM. = $____ − +

(circle appropriate change)

Schedule of A L P change(s)			Schedule of A L P change(s)		
____	$____	− +	____	$____	− +
____	$____	− +	____	$____	− +
____	$____	− +	____	$____	− +
____	$____	− +	____	$____	− +
____	$____	− +	____	$____	− +

Schedule of A L P change: ____ $____ − +

(OVER)

38.

DATE ______

external (Circle a, b, or c.)

a. It is a CUSTOMER. b. It is a SUPPLIER. c. It is dealing with its

(✓) ____ internal

Equation summary:
CHANGE in A = $______ − +
CHANGE in L = $______ − +
CHANGE in P TEMP. = $______ − +
CHANGE in P PERM. = $______ − +

(circle appropriate change)

Schedule of A L P change(s)			Schedule of A L P change(s)		
______	$______	− +	______	$______	− +
______	$______	− +	______	$______	− +
______	$______	− +	______	$______	− +
______	$______	− +	______	$______	− +

Schedule of A L P change: ______ $______ − +

8

5. Show the postings which should have been made to this account for March, so far. Identify each by date.

Petty Cash

6. Remove the next page and complete an analysis for each journal entry the company would have made so far in March.

7. a. On March 30, a petty cash payment was made to the Business Supply Company. By settling the $8 balance due, we save its proprietor from cashing a check. Enter the payment in the Petty Cash book.

   b. The fund was reimbursed on March 31, with a check for $2.70 as the fund cash consisted of $17 in currency and 3 dimes. Complete the March petty cash record.

   c. Complete, in the indicated form(s), an analysis from which the remaining Smothers Bros. journal entry (or entries) could be made.

8. IF the March 31, reimbursing check were not written (7.b. didn't happen), several accounts would need adjusting. Journalize (without explanation) the entry which would give them appropriate balances.

9. What balance will your work give to the Petty Cash account (5, above) if properly journalized and posted after 7.c? $________________

   after 8.? $________________

CHECK YOUR ANSWERS

1. How many checks were written to the Petty Cashier through March 28? 1
2. How much cash was in the fund just before it was reduced? $ 126.10.
3. How much cash should the Petty Cashier have on March 28? $ 24.30.
4. The March 28 petty cash vouchers represent unrecorded debits totaling $ 75.70.

$100 total

5. Petty Cash

1970					1970			
Mar.	1			2 0 0 00	Mar.	18		1 0 0 00

6.

ALWAYS choose plus or minus by effect on basic equation, NOT the ACCOUNT BALANCE.

	ACCOUNT TITLE	Asset change	Liab. change	OWNER'S(') EQUITY CHANGE(S) expense	income	revenue	Other
3/5	Petty Cash	+ 200.00					
	Cash	- 200.00					
3/18	Cash	+ 26.10					
	Petty Cash	- 100.00					
	Postage	+ 6.00					
	Sales Expenses			- 32.50			
	Office Expense			- 8.50			
	Advances to Employees	+ 10.00					
	Purchases	+ 8.60					
	Transportation Out			- 4.80			
	Transportation In	+ 3.50					

expense is NEGATIVE change in O. EQUITY

PROOF of equation: (-$45.80 - $0) = (-45.80 + 0 + 0 + 0)

42.

Mar. 18	100.00								
		Mar. 22	Refund, V. Trook	4000				40.-	Sales Returns
		25	Misc. supplies	1570		3.30	12.40		
		28	T. Smothers, pers.	2000				20.-	T. Smothers, drawing
	100.00	30	Pd. Bus. Supply Co	8.00				8.-	Accounts Payable
	82.70	31	Reimburse:	83.70					
			($1 overage)	-1.00				(1.-)	Cash over and Short
				82.70		3.30	12.40	67.-	
			Balance	100.00					
	182.70		Proof	182.70					

7 a & b

7c.

Check carefully for correct + & − indications.

$[82.70 - (-8)] = (-54.70 + -20)$

Sales Returns

Drawing

DATE 3/31

external (Circle a, b, or c.)

[✓ a.] It is a CUSTOMER. [✓ b.] It is a SUPPLIER. [✓ c.] It is dealing with its owner.

(✓) ____ internal

Equation summary:
CHANGE in A = $ 82.70 [✓ −] +
CHANGE in L = $ 8.00 [✓ −] +
CHANGE in P: TEMP. = $ 54.70 [✓ −] +
PERM. = $ 20.00 [✓ −] +

(circle appropriate change)

expense is negative change in P

Schedule of A L [✓ P] change(s)			Schedule of A [✓ L] P change(s)		
Sales expenses	$ 3.30	[✓ −] +	Accounts payable	$ 8.—	[✓ −] +
Office expenses	$ 12.40	[✓ −] +		$	− +
Sales returns	$ 40.00	[✓ −] +		$	− +
Cash over and short	$ 1.00	− [✓ +]		$	− +
T. Smothers, Drawing	$ 20.00	[✓ −] +		$	− +

Schedule of [✓ A] L P change: Cash $ 82.70 [✓ −] +

8.

1970				
Mar.	31	Sales returns	40—	
		T. Smothers, Drawing	20—	
		Accounts payable	8—	
		Sales expense	330	
		Office expense	1240	
		Petty cash		8270
		Cash over and short		100

Reduces balance to $17.30. Only the money in the fund is an asset.

9. after 7c. $100
after 8 17.30

Reconciling the Bank Statement

The following pages are self-instruction in preparing a reconciliation between the bank record of a depositor's account and the depositor's accounting records for Cash. It is intended for use by anyone who is familiar with the accounting cycle for service and merchandising firms. Because of this, you may be most familiar with a term for which we use a synonym. If we've called something by a different name than you prefer, you should recognize what our synonym is, but, if not, look for the term in a textbook index.

Follow these instructions:

1. Keep track of time you actually spend working to complete the lesson and be sure to report it (number of minutes) on the gripe sheet. (We forecast 35 to 75 minutes.)

   What time is it? Make a note.

2. TRY the pre-test on the next page.

PRE-TEST

* *

Try to supply the amounts in appropriate columns below. Don't be concerned if you are unable to do very well. However, if you do do very well you can save time in completing this lesson.

* *

1. Supply the amounts in the column which will change the beginning balances* shown to identical, correct amounts for Cash on the depositor's Balance Sheet.

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
Cash BALANCE reported on each record.	* $600.00		* $750.00	
a. Bank reports that a customer's check for $42, which we had deposited, has been returned by his bank because he has insufficient funds on deposit.				
b. The bank's monthly service charge is $2				
c. Deposit in transit on the date of the bank's reported balance, $90				
d. Bank has certified our $50 check. It is not among the cancelled checks returned, nor does it appear on their statement				
e. N. S. F. check, $3, was returned with the bank statement.				
f. Among the month's cancelled checks, the bank has mistakenly included a $10 check on the Treasurer's personal checking account.				
g. One cancelled check is for $202.00. We find, however, that our ledger shows it as a $220 payment.				
h. Our last deposit, 200 dollars, does not appear on the bank's statement.				
2. You should now determine a correct adjusted balance for the bank columns.				
Subtotals			$	$
Less				
			$	CORRECTED BALANCE
Put the amount of ONE book correction which would complete a reconciliation	$______ (here	$______ OR here)		
Subtotals	$	$		
LESS				
CORRECTED BALANCE	$			

NAME________________________

GRIPE SHEET

Circle a part that you missed.

What answer did you give?
Feel free to comment.

frame:

1.

2. A B C
A B C

3. A B

4. a b c d e

5. a b c d e

6. A B C D E F

7. 1.
2.
3.

8.

9. A B entry

10. 1 2 3
4 5 6

11. a b both neither

12. 1. 2. 3. 4. 5. 6.
7. 8. 9. 10. 11. 12.

13. 1. 2. 3. 4. 5. 6.
7. 8. 9. 10. 11. 12.
13. 14. 15. 16. 17. 18.
19. 20. 21. 22. 23. 24.

14. A. 1 2 3 4 5
B. $_______ $_______ $_______ $_______
C. $_______ $_______
D. $_______ $_______

15. a. 1 2 3 4 5
b.

16. A.
B.
C.

17.

How many minutes did it take you? ________

PRETEST SOLUTION

On the right is the correct way to fill the columns and summarize.

1. Carefully compare your solution to a through h. Mark each case where you don't agree with amount or column.

2. From a possible score of 10

   I. DEDUCT 1 for each one you marked. ______

   ** II. If the corrected balances you determined aren't identical amounts (not necessarily the correct ones we show) deduct 2 more. ______

   What SCORE? ☐

IF the score above is LESS THAN
- 5 -
start with the first frame, NOW.

If you have more than 4:
choose a short-cut (see below) according to these rules.

(OF COURSE YOU SHOULD START WITH FRAME 1 IF A SHORT-CUT SEEMS TOO DIFFICULT.)

Try short-cut a IF:
you have a perfect score of 10;
or 9, provided you missed neither c, d, or e;
or IF the only points you missed were those for corrected balances.

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
	$600.00		$750.00	
a		42.00		
b		2.00		
c			90.00	
d				50.00
e		3.00		
f			10.00	
g	18.00			
h			200.00	
			1050.—	50.—
missing amount	429.—		50.—	
			$1000.—	
Subtotals	1047.—	47.—		
LESS	47.00		CORRECTED** BALANCES	
	$1000.—			

Try short-cut b IF the only points you missed were for c, d, and/or e;
or IF your score is 7 ALTHOUGH YOU LOST 2 FOR CORRECTED BALANCES.

OTHERWISE, try short-cut c.

SHORT-CUT a: Start with frame 9. Skip to 11, then 14 and following. (IF you miss something in 15, however, better do 13 as it directs.)

SHORT-CUT b: Do frames 6 through 9; then same as short-cut a.

SHORT-CUT c: Start with frame 6. Follow directions.

BANK ACCOUNT RECONCILIATION

1. Whenever a sale is made on credit, the seller has an Account Receivable and the buyer an Account Payable. The two accounts are in separate records, and their balances will be opposite, but the amounts of the balances will be equal.

   Although it is likely to include its amounts-on-deposit in its Cash account, a firm is really relying on the bank's promise to honor its checks. How should the bank show the amount of a depositor's checking account on its books? (Check one.)

   _____ as the debit balance of its Cash account

   _____ as a credit to a liability account for the amount the depositor is entitled to withdraw.

   Move cover sheet to next line, etc.

Cover below dashed line.

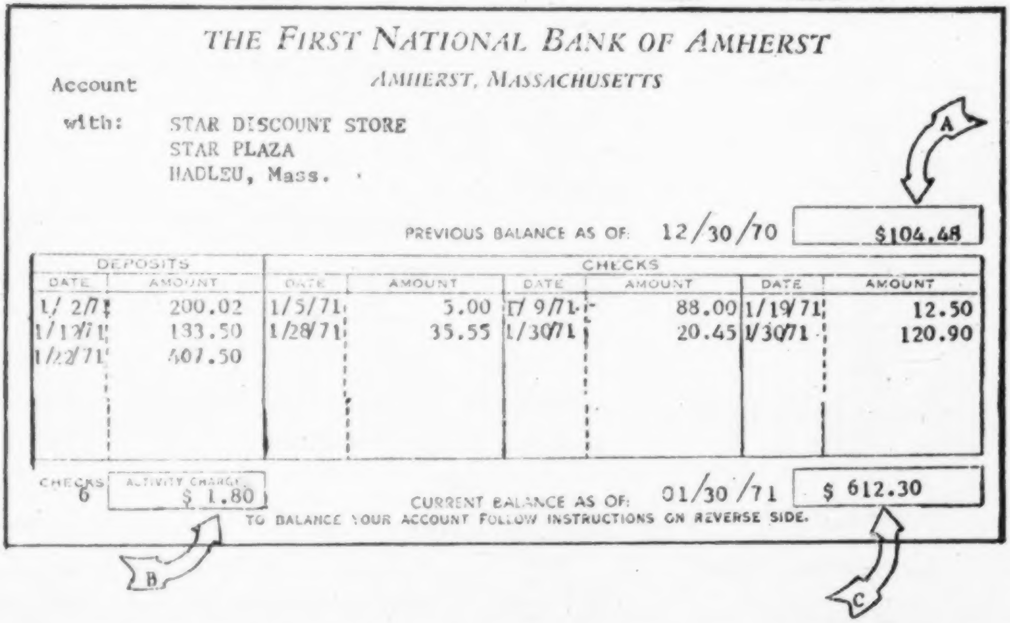
ANS. 1. ✓ as a credit to a liability account for the amount the depositor is entitled to withdraw.

---

2. As with the receivable and payable for the same sale, the bank's debt to the owner of each checking account is equal to that depositor's right to draw checks on his account. The two things are always equal in fact.

   However, when a credit customer mails a payment on his account he debits Accounts Payable, immediately, but before the supplier receives the letter and credits Accounts Receivable, there is a delay. The records of the two firms do not agree.

   Here is an example of a statement which banks send to every customer each month. Is the bank's record of its liability A, B, or C? (Circle in illustration.)



THE FIRST NATIONAL BANK OF AMHERST

AMHERST, MASSACHUSETTS

Account with:
STAR DISCOUNT STORE
STAR PLAZA
HADLEU, Mass.

PREVIOUS BALANCE AS OF: 12/30/70 $104.48

DEPOSITS		CHECKS					
DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT	DATE	AMOUNT
1/ 2/71	200.02	1/5/71	5.00	1/ 9/71	88.00	1/19/71	12.50
1/12/71	133.50	1/28/71	35.55	1/30/71	20.45	1/30/71	120.90
1/22/71	407.50						

CHECKS 6 ACTIVITY CHARGE $ 1.80 CURRENT BALANCE AS OF: 01/30/71 $ 612.30

TO BALANCE YOUR ACCOUNT FOLLOW INSTRUCTIONS ON REVERSE SIDE.

One usual reason the depositor will show an amount of cash on deposit which is smaller than the bank's reported liability is that he has written checks which the bank has not received and paid. He will not have recorded one decrease which the bank already has, until he receives this statement. Is it (circle)

A B or C ?

2.

3. Included with Star Discount Store's bank statement were the cancelled checks it lists. Someone compares these checks to the store's record of all checks written. If any checks have not "cleared", they are listed and added. In the Star Store example there were three "outstanding checks". They totaled $308.03.

ANS. 2. C

B(Charge for service)

A indicates liability reported a month earlier.

The outstanding checks amount is the only thing missing from this "bank reconciliation statement".

Star Discount Store
Bank Reconciliation
January 31, 1971

Balance per books	$306.07	Balance per bank	$612.30
Add:		Add:	
Deduct:		Deduct:	
Bank service charge	1.80		
Adjusted balance		Adjusted balance	

When the two adjusted balance figures agree, it shows that when both records accurately record the same events, the bank's debt and the store's cash asset are identical amounts. With errors, agreement is an unlikely coincidence.

Agreement is not enough. Star Discount Store should determine the cash amount its Balance Sheet should show for January 31.

It can reconcile (show agreement) in TWO ways. Which statement shows its cash asset correctly for Jan. 31? Circle the letter.

A

Balance per books	$306.07	Balance per bank	$612.30
Add:	-0-	Add:	-0-
	$306.07		
Deduct:		Deduct:	
Bank service charge	1.80	Outstanding checks	308.03
Adjusted balance	$304.27	Adjusted balance	$304.27

B

Balance per books	$306.07	Balance per bank	$612.30
Add:		Add:	-0-
Outstanding checks	308.03		
Deduct:	$614.10	Deduct:	-0-
Bank service charge	1.80		
Adjusted balance	$ 612.30	Adjusted balance	$612.30

4. In the last frame the two items needed to reconcile had not yet been included in the record of one or the other of the parties. OMISSIONS from one of the ledgers (bank or depositor) is one of two general types of reasons there is a need to reconcile.

3. A (The money has already been spent. It should not be part of Star's 1/31 asset.)

The other category of reasons that the bank statement balance is not equal to the balance of the Cash account (or to the check stub balance) is that THE TWO RECORDS HAVE RECORDED UNEQUAL AMOUNTS FOR THE SAME EVENT.

Here are some reasons for needing to reconcile. Check the column which indicates which record is wrong or incomplete.

	On the BANK books		On the Co. books	
	omission	WRONG amt.	omission	WRONG amt.
a. outstanding checks	✓	___	___	___
b. Bank statement shows correct amount for misadded deposit slip which understated a day's cash sales.	___	___	___	___
c. Our $45 check shown as $4.50 on bank statement.	___	___	___	___
d. Bank statement has credited amount of note and interest it collected for us to Co.'s deposit balance.	___	___	___	___
e. Cancelled checks include one which we sent to a supplier but had never recorded.	___	___	___	___

Could an omission in one record have been recorded at the wrong amount in the other record as well?

The remainder of the answers to the frames are in an answer supplement printed on GREEN PAGES.

Find it, and check your answers there.

---

5. As shown, a in frame 4 would be deducted from balance per bank in a reconciliation. You enter the other letters from 4 to show the type of correction needed.

Balance as shown by the cash account		$xxxxx
Plus	$xxx	
....	xx	+ xxx
		$xxxxx
Minus	$ xx	
	x	
....	xxx	- xxx
Corrected Cash Acct. Balance		$xxxxx

Balance as shown on the Bank Statement		$xxxxx
Plus	$xxx	
....	xx	+ xxx
		$xxxxx
Minus	$xxx	
a,	xx	
....	xxx	- xxx
Corrected Bank Statement Balance		$xxxxx

ALL answers are in the supplement from now on. Check 5 there, if you haven't.

6. When the items listed below this outline statement are entered in the proper section, the adjusted balances will reconcile. Indicate the appropriate section for each item with its letter. Then enter amount of each section total, and show that the adjusted balances agree.

Ajax Company
Bank Reconciliation Statement
June 30, 1970

Balance per bank	$72.00
Add:	
______________________	($)
TOTAL	($)
Deduct:	
______________________	($)
Adjusted balance per bank	($)
Balance per check stubs	$96.00
Add:	
______________________	($)
TOTAL	($)
Deduct:	
A, B	($)
Adjusted balance per check stubs	($)

A. Bank's activity charge for June, $1.

B. N. S. F.* check: bank returns $10 check from a deposit. Maker's bank refused payment because he had insufficient funds in his account.

C. Two checks Ajax has issued are not among the cancelled checks: #114, $6
#119, $7

D. Bank shows our June 10 deposit as $21. It was actually $12. (Show correction in one place for the amount of the overstatement.)

E. Counter check# for $5 is among cancelled checks. Proprietor forgot to correct check stub record.

F. Deposit in transit: our June 30 deposit of $30 was not received at the time the bank's statement was prepared.

---

* "Not Sufficient Funds"

# Blank, stubless check the bank keeps at its "counter" (for persons who don't have checkbooks with them).

7. Special terminology:

The last frame introduced two usages which you need to recognize without additional explanation.

1. an equivalent for "insufficient funds", which a bank uses to label a check which is larger than the maker's deposit balance at the time it is presented for payment. It refuses payment, of course.
2. a deposit which is omitted from the bank's statement because it becomes known to the bank after the cut-off time for its statement period. The depositor, however, has recorded its receipts within that period, and has sent the deposit to the bank.

Here is another case with a special label.

3. If requested, a bank will guarantee to accept a check. It protects itself by deducting the amount from the depositor's account, immediately; and labels the check to show that payment is assured. Thus, even when it hasn't cleared, the check will not be part of the "outstanding checks".

Here are the terms. Match them to the above explanations by writing the number of each in the blank before the applicable term.

____ deposit in transit ____"N. S. F. check" ____certified check

---

8. Can you prepare a journal entry to bring the Ajax company Cash account to its correct balance? (It agrees with the check stubs.)

The activity fee might be treated as miscellaneous expense, but use the title, "Bank service charges". The counter check (E) was a personal withdrawal for the benefit of owner, Herman Ajax.

JOURNALIZE:

	30				
		To record bank charges and H. Ajax			
		withdrawal. To create receivable to			
		replace N.S.F. check.			

9. Here are two versions of the same bank reconciliation statement. Make the journal entry (or entries) which will correct the company's accounts for the indicated date. On which statement is your entry based? Indicate below.

A.

Feldman, Neal & Co.
Bank Reconciliation for
April 30, 1971

Balance per bank	$120	Balance per books		$ 88
Add: deposit in transit	40	Add: Check #208	$22	
Total	$160	Collection	51	73
		Total		$161
Deduct:		Deduct:		
outstanding checks	15	R. E. Lee check		16
Adjusted balance	$145	Adjusted balance		$145

B.

Feldman, Neal & Co.
Bank Reconciliation for
April 30, 1971

Balance per bank	$120	Balance per books			$ 88
Add: Deposit in transit	40	Add: Duplicate recording of payment to Collins Co., a supplier.		$22	
Total	$160	Collection of:			
		Notes Rec.	$50		
		Interest	2		
			$52		
		Less: Bank fee	1	51	73
		Total			$161
Deduct:		Deduct: N.S.F. check of			
Outstanding checks	15	customer			16
Adjusted balance	$145	Adjusted balance			$145

Which statement tells enough? (Circle) A B

30				

Check your responses in the green supplement.

10. In this outline of a bank reconciliation statement there is a place for the four types of items which may be needed.

Any fact which causes the bank's liability record to disagree with our Cash account belongs to one type.

RECONCILIATION

Balance as shown on the Bank Statement..........		$xxxxx
Plus type A items........	$xxx	
	xx	+ xxx
		$xxxxx
Minus type B items.......	$ xx	
	xx	
	xxx	- xxx
Corrected Bank Statement Balance...............		$xxxxx
Balance as shown by the Cash account............		$xxxxx
Plus Type C items.......	$xxx	
	xx	+ xxx
		$xxxxx
Minus Type D items......	$ xx	
	x	
	xxx	- xxx
Corrected Cash account Balance................		$xxxxx

For each of the following facts, circle the letter for the type of item which it calls for in the reconciliation.

FACTS	Type of item
1. $75 worth of our checks are outstanding	A [✓ B] C D
2. A deposit, and resulting Cash debit, understated by recording $110 check as $100. (Bank records amount collected.)	A B [✓ C] D
3. Bank's monthly service charge is $4.70	A B C D

CHECK YOUR ANSWER, then continue.

4. On the date of the bank statement, we had recorded a deposit which we had not yet taken to the bank.	A B C D
5. Bank has deducted another firm's check among the cancelled ones it returns with its statement of our account.	A B C D
6. Bank's debit memorandum for its automatic deduction of amount due on our bank loan is dated the day before our reconciliation date.	A B C D

11. Not everyone is familiar with debit and credit memos. They are simply messages about the accounting which has already been done by the issuing firm. Thus, the debit memorandum in part 6 of the last frame (bank's notice to depositor of a reduction in his balance) was a debit, rather than a credit, memo simply because debits reduce liabilities.

If the bank increases a customer account, it issues a credit memorandum.

In which case(s), if any, would it issue a credit memo to our firm?

a. Sending a memo with an N.S.F. check which our customer's bank had refused.

b. Informing us of the receipt of dividends on stock investments which its trust department manages for us.

(circle) a b both neither

---

12. Below the outline of a reconciliation statement are more facts. If they would create a discrepancy between the bank and book figures ON MAY 31, circle the number of the item type. If no item is called for, circle NE (no effect).

RECONCILIATION
May 31, 1970

Balance per BANK		xxxxx	Balance per BOOKS		xxxxx
Plus Type 1 items......	xxx		Plus Type 3 items......	xxx	
	xx	+ xxx		xx	+ xxx
		xxxxx			xxxxx
Minus Type 2 items.....	xx		Minus Type 4 items.....	xx	
	x			xx	
	xxx	- xxx		xxx	- xxx
Corrected Cash Acct. Balance		xxxxx	Corrected Bank Statement Balance		xxxxx

FACTS

1. On April 30, the outstanding checks were $800.67. 1 2 3 4 [✓ NE]

2. The checks not yet cleared on May 31 totaled $69.02. 1 2 3 4 NE

3. Charge of $5.00 for printing of checks for our company appears on the bank statement. 1 2 3 4 NE

CHECK and continue.

4. (Give the net effect.) Credit memorandum for $272 is sent with the bank's statement. It is the net addition to our account for coupons on our bonds which, for a $3 fee, the bank had collected for us. 1 2 3 4 NE

5. The first item on this bank statement is the $79 deposit of April 30, which was in transit at the time of the last bank reconciliation. 1 2 3 4 NE

6. We recorded as $123 the check you wrote for $12.30. 1 2 3 4 NE

CHECK YOUR ANSWERS.
(Continue here ONLY IF you missed one of the last set. OTHERWISE skip to the NEXT PAGE.)

7. Although it had not yet cleared, the check which the bank certified for us on May 25, appears as deduction on their statement of our account. 1 2 3 4 NE

8. A check for 86 dollars on the personal account of the company treasurer has been mistakenly deducted from the company balance by the bank. 1 2 3 4 NE

9. The bank has recorded our deposit of $89 as 98 dollars and has added the erroneous amount on our statement. 1 2 3 4 NE

13. On the left of the form below are more facts about the record of our firm and the bank's statement of our deposit balance.

Write each amount which will be needed to reconcile in an appropriate column.
If the item will not be needed, write "no effect" .

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
0. Bank's debit memo accompanies its statement. A $4.50 charge for returning a check on which we had stopped payment..................		4 50		
1. The cancelled checks returned with a statement totaled $370.22..........		no effect		
2. Checks we have written but which were not returned, $28.				
3. The bank statement records the deposit which was in transit at the end of last month for the correct $111.				
CHECK YOUR ANSWERS, then continue.				
4. We have written $456 worth of checks this month, but only $406 worth have cleared. One $5.00 check from last month is still outstanding.				
5. The bank does not seem to show our last deposit of $80.				
6. We find that we have recorded the $10 check to Hays & Company twice.				
CHECK and continue.				
7. An $8.00 check included in our deposit is returned NSF.				
8. We have recorded one of our deposits as $130 rather than the $310 total of the deposit slip.				
9. Bank showed our daily deposits for the month. They were $1,629.14.				
Check and continue.				
10. We have written $20.20 worth of checks which were not returned with the bank statement this period.				
11. There was a deposit in transit of $60.				
12. One of the returned checks was a counter check for $9.00 about which our bookkeeper had not been informed.				

Did you get the last two sets (7 through 12) entirely correct? If so,

SKIP ahead to the next page. If not, continue, but you may skip as soon as you have 2 consecutive sets entirely right.

BALANCE PER BOOKS		BALANCE PER BANK	
ADD	DEDUCT	ADD	DEDUCT

13. The bank's charges for the month were $6.50.

14. We recorded our $7.00 check as $70.00.

15. The bank includes the notification of its deduction for dishonored note which we had endorsed.

Note	$40.00
Interest	.80
Protest fee	2.00
	$42.80

CHECK, continue--or skip. if 10 through 15 were ALL correct.

16. Amounts in excess of $600 at the end of the month are transferred by the bank to the savings account. This excess was $12.04 as their debit memorandum shows.

17. Our $32.00 check has been returned but is listed twice on the bank statement as $23.00.

18. The bank has failed to show our $50 check which it certified, but we have not included it in our outstanding checks.

CHECK, continue or skip.

19. We have been given credit for a $27 deposit to the personal account of the proprietor's wife.

20. As agent, the bank collected our note receivable having a face of $80.00 and accrued interest of $1.00. A $1.50 fee for collection was charged.

21. If you recorded one net change for **#20**, record the off-setting amounts in TWO SEPARATE COLUMNS, or if you did that in **20**, record the net effect here.

CHECK, continue or skip.

22. The bank showed $65.00 for our $56.00 deposit.

23. A last deposit of $3,200 was mailed too late to reach the bank on the month end.

24. We recorded as $30.00 the $3.00 check which we find among our cancelled checks.

14. A. Write the amount of the correction in the appropriate column. If there is no effect, so indicate.

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
Cash BALANCE reported on each record.	67.—		76.—	
1. N. S. F. check for $7.50 is included with the bank statement.				
2. Bank service charge for the month, $3. .				
3. The cancelled checks include one for $35 which we had recorded at $3.50. . . .				
4. Bank has included a $10 check on the owner's personal checking account among the cancelled checks of the business.				
5. The first deposit shown on the bank statement is the one in transit at the end of last month. We recorded this $700 at the time we sent it.				

B. **Determine the column totals.** . . . . $______ $______ $______ $______

C. If the balance per bank has been fully corrected, how much is needed to reconcile with one additional book item? (Put it in the appropriate space.). . . . . . . $______ $______

D. If the balance per books were the correct one in B, above, what correction would the balance per bank require?. . . . . $______ $______

* *

* THE ANSWER to this frame is the first one inside the folded pages of the ANSWER SUPPLEMENT (p. 24). Turn the booklet and open to full length. *

* *

* *

Note that the form in frame 14, and the one below are NOT Bank Reconciliation Statements.

* *

15. a. **Indicate correction or no effect.**

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
Cash BALANCE reported on each record.	$ 614.50		$1,000.00	
1. Check # 102, which the bank has certified, is deducted on their statement at the correct $200, although it is not among the cancelled checks.				
2. Bank records our $90 deposit as $9 on its statement.				
3. Bank includes reimbursement check for Petty Cash, $8. Bookkeeper is found to have recorded the following for this transaction: Dr. Miscellaneous Exp. 3.20 Dr. Sales Returns 3.00 Dr. Telephone & Telegraph 1.80 Cr. Petty Cash 8.00. . . .				
4. The bank omits our last deposit of 60 dollars. It was in transit when their statement was prepared.				
5. Outstanding checks, exclusive of those certified, total $440.				
b. **YOU SUPPLY** the missing item which will complete the reconciliation. Supply a new type, NOT another of the above; and put it in the appropriate column. (DESCRIBE IT FULLY BELOW.##)	Here OR $	here. $		
Subtotals.	$	$	$	$
LESS.				
CORRECTED BALANCES.	$	. . . . . .	$	

##

16. On February 28, 1970, the check stub and Cash account balances of the W. E. B. Dubois Co. were as shown in the skeleton statement. The statement from his bank included cancelled checks and a credit memorandum for $250 which was collected from Zeisel Co. on its non-interest-bearing note. The statement also showed a 50 cent fee which the bank retains for acting as agent and the deposit balance already entered below. It further showed a correction of the Feb. 25 deposit and returned the N. S. F. check of customer Y.Y. Flurch for $30 which we had included in it.

In comparing the cancelled checks to the check stubs, the following checks were found not to have cleared:

Check #50, still outstanding from December 30,	$	8.55
Checks 99, 103, 104 and 105, recently issued,		3,300.00

A counter check for $100 was also discovered. Mr. Dubois had written it for personal use, but had not remembered to inform the bookkeeper. Check #95, correctly issued to settle the account with M. Unger at $1041,16, was found to have been recorded in the books, as well as on the stub, as $1014.16.

It was also noticed that the $800 deposit of Feb. 28, was in transit at the time of the bank statement, and that the deposit of $997, which was made on February 5, had been included, mistakenly, by the bank as $987.

A. Prepare a reconciliation statement by using the above information and the form provided.

B. ONE MORE ITEM IS NEEDED to produce a reconciliation. Assume it to be in adjusting the BANK balance. Invent a reasonable, NEW item (not "another ... something given above) and enter it so as to complete the reconciliation. Describe it in the space provided.

C. Journalize one or more entries to fully correct the Dubois books on February 28.

A. ______________________

____

____

Balance per books		$ 464.56	Bank Statement Balance		$ 2,965.61
Add:			Add:		
	$			$	
Total		$	Total		$
Deduct:			Deduct:		
	$			$	
Adjusted balance		$	Adjusted balance		$

B. ______________________

____

____

C.

	30			

Look back to frame 9 (p. 6). Is your statement in A more like 9 A or 9 B? Make sure your statement is correctly headed and as informative as necessary for someone else to understand. Then CHECK your answers very carefully in the SUPPLEMENT.

IF YOU WERE CORRECT in the reconciliation part of the last frame, CONGRATULATIONS! That's all you need to do. If you made any mistakes in A, however, do the short problem on the next page.

17. The December 31, 1965, bank statement of the Excell Company showed a bank balance of $5,540.50. The check book balance on that date was $4,814.65. Three debit memorandums were enclosed with the bank statement. They were:

(1) a $15.00 charge for printing checks;
(2) a $9.90 charge for an overstated total on a deposit ticket;
(3) a $41 charge for a customer's check returned because of insufficient funds.
(4) A credit memorandum enclosed with the bank statement indicated that the bank had collected a $100 note for the Excell Company, deducted a $3 collection fee, and deposited the balance to the account of the company;
(5) The bank statement did not show a $750 deposit which was mailed to the bank on December 31;
(6) There were outstanding checks totaling $1,350.

1. You are to prepare a bank reconciliation for the Excell Company as of December 31, 1965, using whatever spaces you need in the form below.

2. The items mentioned will not produce a reconciliation. After you have entered them in the appropriate location, invent a reasonable item which, when entered as a correction to the balance per books, will complete the reconciliation.

Explain the nature of this item fully and carefully in a footnote.

EXCELL COMPANY
Bank Reconciliation, December 31, 1965

Balance per Books		$4,814.65	Bank Statement Balance		$5,540.50
Add:			Add:		
____________	$______		____________	$______	
____________	______		____________	______	
____________	______	______	____________	______	______
Total		$______	Total		$______
Deduct:			Deduct:		
____________	$______		____________	______	
____________	______		____________	______	
____________	______		____________	______	
____________	______	______	____________	______	______
Adjusted balance		$______	Adjusted balance		$______

Footnote: ____

____

____

The remaining pages are copy for the ANSWER SUPPLEMENT to Reconciling the Bank Statement. Except for 24 through 27, which are full-size pages, each page is meant to be cut and assembled into a half-size booklet which can be used comfortably as a cover sheet, as well as a confirmation source.

ANSWER SUPPLEMENT

In this booklet you should ignore the back of this page--and each left-hand page--as you go through and check your answers on consecutive right-hand pages. Turn a page after you finish answering a frame. There will be more instructions when you need them. Keep the large pages folded until you are directed to use them.

ANSWER 8.

30	Accounts Receivable		10 00	
	Bank service charges		1 00	
	H. Ajax, Drawing		5 00	
	Cash			16 00
	To record bank charges and H Ajax withdrawal. To create receivable to replace N.S.F. check.			

ANSWER 4.

	On the BANK books		On the Co. books	
	omission	WRONG amt.	omission	WRONG amt.
a (given). .	✓			
b.				✓
c.		✓		
d.			✓	
e..			✓	

FIRST, answer frame 5; then check it on the next right-hand page.

ANSWER 9. A [✓ B]

One compound entry is most efficient.

30	*Cash*	57	00		
	Miscellaneous Expense (or Collection Expense)	1	00		
	Accounts Receivable	16	00		
	Notes Receivable			50	00
	Interest Earned (or Interest Income)			2	00
	Accounts Payable			22	00
	To adjust Cash balance per bank reconciliation.				

However, any other equivalent combination is equally correct. e. g. →

30	Cash	22	00		
	Accounts Payable			22	00
	To cancel second recording of check to Collins.				
30	Cash	57	00		
	Miscellaneous Expense.	1	00		
	Interest Earned			2	00
	Notes Receivable			50	00
	Collection of note and interest less bank's fee.				
30	Accounts Receivable	16	00		
	Cash			16	00
	N.S.F. check of R.E. Lee.				

ANSWER 5.

Balance as shown by the cash account			$xxxxx
Plus	b, d	$xxx xx	+ xxx
			$xxxxx
Minus	e	$ xx x xxx	- xxx
Corrected Cash Acct. Balance			$xxxxx

Balance as shown on the Bank Statement			$xxxxx
Plus		$xxx xx	+ xxx
			$xxxxx
Minus	a, c	$xxx xx xxx	- xxx
Corrected Bank Statement Balance			$xxxxx

Type of item

ANSWER 10-1. . . A [✓ B] C D

2. . . A B [✓ C] D

3. . . A B C [✓ D]

ANSWER 6.

Ajax Company
Bank Reconciliation Statement
June 30, 1970

Balance per bank	$72.00
Add:	
F	($30.00)
TOTAL	($102.00)
Deduct:	
C, D	($ 22.00)
Adjusted balance per bank	($ 80.00)
Balance per check stubs	$96.00
Add:	
	($ -0-)
TOTAL	($ 96.00)
Deduct:	
A, B, E	($ 16.00)
Adjusted balance per check stubs	($ 80.00)

10

It's OUR correct cash to which we reconcile.

ANSWER 10-4. [✓ A] B C D

5. [✓ A] B C D

6. A B C [✓ D]

ANSWER 7.

2 deposit in transit

1 "N. S. F. check"

3 certified check

ANSWER 11.

[✓ b] ...receipt of dividends on stock investments....

Frame 8 should be based on the analysis below.

The symbols in the form stand for:
A = TOTAL assets L = TOTAL liabilities
P = TOTAL proprietorship TEMP. = temporary PERM. = permanent

Why will the depositor never need to record corrections to balance per bank?

. . . .

DATE 6/30 external (Circle a, b, or c.)
[✓ a.] It is a CUSTOMER. [✓ b.] It is a SUPPLIER. [✓ c.] It is dealing with its owner.

(✓), ___ internal

Equation summary:
CHANGE in A = $ 6.00 [✓ −] +
CHANGE in L = $ —— − +
CHANGE in P TEMP. = $ 1.00 [✓ −] +
CHANGE in P PERM. = $ 5.00 [✓ −] +

(circle appropriate change)

Schedule of [✓ A] L P	change(s)		Schedule of A L [✓ P]	change(s)	
Accounts Receivable	$10.-	− [✓ +]	Bank Service Charges	$1.00	[✓ −] +
Cash	$16.-	[✓ −] +	H. Ajax, Drawing	$5.00	[✓ −] +

Schedule of A L P change: __________ $ _____ − +

. . . .

______ If you recognize an error in your journal entry, correct it before you continue. (Remember, the only correct reason for any debit or credit is that it follows a rule for changing assets or one for changing equities. *) Now, check your corrected entry on the next page.

---

*liabilities AND proprietorship

NOW TURN THIS BOOKLET end for end (so
you can read this).

Continue to find the answers you need on the right-hand page, in the same way.

The first ANSWERS for 12 are on the page at your right.

14. A.

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
Cash BALANCE reported on each record.	67.00		76.00	
1		$ 7.50		
2		3.00		
3		31.50		
4			$10.00	
5			No effect	
B.	$67.00	$42.00	$86.00	$ 0
C.	61.00			
D.				61.00

C. ($128.00 - $42.00) = $86.00

$\boxed{\$25}$ = ($86 - 61)

ANSWER 12-1. 1 2 3 4 [✓ NE]

2. 1 [✓ 2] 3 4 NE

3. 1 2 3 [✓ 4] NE

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
ANSWER 13-10				20.20
11.			60.00	
12.		9.00		

ANSWER 12-4. 1 2 [✓ 3] 4 NE

(If 3 and 4 were both circled, what error would you not be able to detect?)

5. 1 2 3 4 [✓ NE]

6. 1 2 [✓ 3] 4 NE

To put back the extra $110.70
we had credited to Cash.

	BALANCE PER BOOKS				BALANCE PER BANK	
	ADD		DEDUCT		ADD	DEDUCT
ANSWER 13-13			6	50		
14	63	—				
15			42	80		

ANSWER 12-7 1 2 3 4 [✓ NE]

8. [✓ 1] 2 3 4 NE

9. 1 [✓ 2] 3 4 NE

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
ANSWER 13-16		12 04		
17			14 —	
18				50 —

Bank deducted	$46
correct	32
Add back	$14

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
ANSWER 13-0		4 50		
1.		no effect		
2.				28 —
3.		No. effect		

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
ANSWER 13-19				27 00
20	72 50			
21	81 00	1 50		

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
ANSWER 13-4				55 —
5			80 —	
6	10 —			

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
ANSWER 13-22				9 00
23			3200 00	
24	27 00			

ANSWERS BEGIN OPPOSITE.

AFTER YOU COMPLETE frame 14, TURN the booklet again, and OPEN THE FOLDED PAGES. The answers are inside(page 24)--right-hand page.

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
ANSWER 13-7		8 —		
8	180 —			
9	No effect			

14. A.

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
Cash BALANCE reported on each record.	67.00		76.00	
1		$ 7.50		
2		3.00		
3		31.50		
4			$10.00	
5			No effect	

B. $67.00 $42.00 $86.00 $ 0

C. 61.00
($128.00 - $42.00) = $86.00

D. 61.00

$25 = ($86 - 61)

ANS. 15 a.

	BALANCE PER BOOKS		BALANCE PER BANK	
	ADD	DEDUCT	ADD	DEDUCT
Cash BALANCE reported on each record	$614.50		$1,000.00	
1. Check #102, which the bank has certified, is deducted on their statement at the correct $200, although it is not among the cancelled checks........	No effect			
2. Bank records our $90 deposit as $9 on its statement........................			81.00	
3. Bank includes reimbursement check for Petty Cash, $8. Bookkeeper is found to have recorded the following for this transaction: Dr. Miscellaneous Exp. 3.20 Dr. Sales Returns 3.00 Dr. Telephone & Telegraph 1.80 Cr. Petty Cash 8.00...		8.00		
4. The bank omits our last deposit of 60 dollars. It was in transit when their statement was prepared...............			60.00	
5. Outstanding checks, exclusive of those certified, total $440.................				440.00
b. YOU SUPPLY the missing item which will complete the reconciliation. Supply a new type; NOT another of the above; and put it in the appropriate column. (DESCRIBE IT FULLY BELOW.##).........................	94.50			
Subtotals..........................	$709.00	$8.00	$1141.00	$440.00
LESS..........................	8.00		440.00	
CORRECTED BALANCES................	$701.00	....	$701.00	

## *Possible missing items:*

1. *94.50 collection by bank on our behalf.*
2. *Cash sales of $989.50 recorded as 895.00 understated dr. $ 94.50* — *OR OTHER numbers with same difference*
3. *94.50 check to a supplier had been recorded twice.*
4. *Omitted recording of 94.50 deposit.*
5. *47.50 collection recorded as a payment.*